

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY
CIVIL ACTION NO 16-MD-2738 (FLW) (LHG)

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IN RE JOHNSON & JOHNSON : DAUBERT HEARING
POWDER PRODUCTS MARKETING, : JULY 24, 2019
SALES PRACTICES. : VOLUME 3
----- :

CLARKSON S. FISHER UNITED STATES COURTHOUSE
402 EAST STATE STREET, TRENTON, NJ 08608

B E F O R E: THE HONORABLE FRED A. L. WOLFSON, USCDJ

A P P E A R A N C E S:

BEASLEY ALLEN, ESQUIRES

BY: P. LEIGH O'DELL, ESQUIRE (ALABAMA)

-and-

ASHCRAFT & GEREL, ESQUIRES

BY: MICHELLE A. PARFITT, ESQUIRE (VIRGINIA)

-and-

MOTLEY RICE, ESQUIRES

BY: DANIEL R. LAPINSKI, ESQUIRE (NEW JERSEY)

NATHAN D. FINCH, ESQUIRE (WASHINGTON D.C.)

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BY: JEROME H. BLOCK, ESQUIRE (NEW YORK)

On behalf of Plaintiffs Steering committee

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BY: SUSAN M. SHARKO, ESQUIRE (NEW JERSEY)

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SKADDEN, ARPS, SLATE, MEAGHER & FLOM, ESQUIRES

BY: JOHN H. BEISNER, ESQUIRE (WASHINGTON, D.C.)

-and-

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(Continued.)

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A P P E A R A N C E S C O N T I N U E D

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On behalf of Defendant Johnson & Johnson

SEYFARRTH & SHAW, ESQUIRES
BY: THOMAS L. LOCKE, ESQUIRE (WASHINGTON D.C.)
On behalf of Defendant Personal Care Products Council

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M O R N I N G S E S S I O N

(In open court.)

THE DEPUTY CLERK: All rise.

THE COURT: Thank you.

Good morning. Everyone may be seated.

Are we ready?

MS. BROWN: Before we begin, I did want to raise one issue regarding Dr. Longo's testimony with the Court.

Could we perhaps ask Dr. Longo to leave before I do that?

THE COURT: Yes.

(Dr. Longo leaves the courtroom.)

MR. BLOCK: Your Honor, my name is Jerome Block, and I'm from the firm of Levy Konigsberg. I will be assisting the Plaintiffs Steering Committee and I will be presenting Dr. Longo's testimony.

Thank you, your Honor.

MS. BROWN: Good morning, your Honor.

I'm Alli Brown from Weil Gotshal for J&J.

Counsel was kind enough to just provide me a few minutes ago with a copy of the PowerPoint they intend to use with Dr. Longo; and in looking through it, I have a couple of concerns that I wanted to raise

1 now.

2 A number of the slides deal with internal
3 Johnson & Johnson company documents. I would submit
4 to the Court that Dr. Longo's interpretation of those
5 documents is not relevant to the inquiry here. He is
6 a materials scientist who plaintiffs are putting
7 forward as an expert witness on his own testing of
8 Johnson & Johnson samples. He has no personal
9 knowledge about these decades old documents. He has
10 no particular expertise that would allow him to
11 interpret these company documents.

12 In fact, your Honor, as it relates to a number
13 of the documents that are contained in counsel's
14 PowerPoint presentation, Dr. Longo himself has
15 testified as recently as a month or two ago that
16 essentially the interpretation of those documents is
17 an issue for the trier of fact.

18 So I would submit, putting Dr. Longo up to
19 interpret documents that he doesn't know anything
20 about and has no expertise to interpret is
21 inappropriate in this setting and should not be done
22 here.

23 MR. BLOCK: Good morning, your Honor.

24 Any documents that are internal documents or
25 historical documents that are going to be presented

1 today with Dr. Longo's testimony were, first, either
2 referenced in his report or were part of his reliance
3 materials in this MDL.

4 The relevance of the documents that we are
5 going to present -- and I think it will be helpful to
6 the Court to see them in context as we go -- is that
7 these documents go directly to the issue of the
8 methodology, the reliability of the methodology.

9 For example, we have one -- it is slide 20 --
10 that shows the heavy liquid separation preparation
11 method used by a consultant from Johnson & Johnson
12 back in 1974 and being used the same way in which
13 Dr. Longo has used it in this case, being used in the
14 same way as Dr. Alice Blount used that same method in
15 1991, being used in the same way as ISO, the
16 International Standard Organization specifies that it
17 be used.

18 THE COURT: Let me just short circuit. I
19 understand where everybody is on this point. If he
20 has cited them in his report, I'll let him reference
21 them. I understand I'm not going to accept how he may
22 interpret a document. We don't have a jury here. So
23 I think I can filter this out appropriately and know
24 when he may be overstepping, and when he says that a
25 particular test was done, and, yes, it has been done

1 for 50 years, and look J&J did it as well, I'm sure
2 you will cross him whether that is the same test or
3 not.

4 Let's get it in and let's go.

5 MS. BROWN: Thank you, your Honor.

6 MR. BLOCK: We're ready to proceed.

7 THE COURT: Bring the witness in.

8 (Dr. Longo enters the courtroom.)

9 (Pause.)

10

11 WILLIAM E. LONGO, called as a witness on behalf of the
12 plaintiffs, having been first duly sworn, testifies as
13 follows:

14

15 DIRECT EXAMINATION

16 BY MR. BLOCK:

17 Q. Dr. Longo, good morning.

18 A. Good morning, sir.

19 Q. Dr. Longo, can you state your full name for the
20 record.

21 A. William Edward Longo.

22 Q. Dr. Longo, where do you live and work?

23 A. I live in Alpharetta, Georgia, which is right
24 outside of Atlanta, and I work in Suwanee, Georgia,
25 which is another suburb outside of Atlanta.

1 Q. What is your employment and title at the
2 company?

3 A. I work for a company called Materials Analytical
4 Services and I am the president.

5 THE COURT: Keep your voice up. I have been
6 told those in the back of the Court cannot hear. I
7 need everyone in the courtroom to hear. I know you
8 testify regularly. I know you know how to do it.

9 Q. Before we talk about your company Materials
10 Analytical Services, I would like you to tell the
11 Court about your education and your background,
12 starting with undergrad, going to your Master's and
13 Ph.D..

14 A. I went to the University of Florida, got a
15 Bachelor's and Major in microbiology with a Minor in
16 chemistry.

17 I went to graduate school at the University of
18 Florida. I got a Masters in materials science and
19 engineering and then I graduated in 1983 with a Ph.D.
20 or Doctorate in materials science and engineering.

21 Q. What is the field of materials science and
22 engineering that you have a Master's and Ph.D. in?

23 A. It is literally the study of materials both to
24 characterize them, to understand them, and to develop
25 new materials. These materials can usually be broken

1 down into five major groups: metals or metallurgy,
2 polymers or plastics, minerals, ceramics, such as
3 asbestos, composites where you may mix two of these
4 types together, putting metal spheres in with a
5 polymer to change what it can do and behave, and
6 biomaterials. These are things that are implanted
7 into the body.

8 As a materials scientist we are educated and
9 taught in practice on where are the best types of
10 materials to use in a situation that it is needed in.
11 For example, a civil engineer and a mechanical
12 engineer will probably go to a materials scientist on
13 what is the best concrete strength if they are going
14 to build a bridge, how strong is the concrete they
15 need for the specifications, what type of metal for
16 the structures out there, can it stand up to
17 corrosion, and so on.

18 Materials scientists also develop a lot of new
19 materials. A simple example is if you are my age, you
20 can remember when soda cans were steel and had a seam
21 down the back side of it to put the cylinder together,
22 and also had a second piece for the top and a third
23 piece for the bottom. Materials scientists came up
24 with what we call Aluminium Cans, which is a copper
25 aluminum alloy that was made that you could make it

1 in two pieces.

2 Q. Let's talk about your experience testing
3 materials for asbestos. When did that begin and how
4 did you get your start testing materials for asbestos?

5 A. The very first air sample I tested for asbestos
6 was in 1984, air sample. I got involved in it because
7 I read an article by Walter C. McCrone about using
8 phase contrast microscopy to analyze air samples to
9 determine how much asbestos was in it, and I thought
10 transmission electron microscopy would be better.

11 Literally, the first company I was involved in
12 opened its doors in October of 1983, about two months
13 before I graduated and got my Ph.D.

14 Q. Did you have training during your graduate
15 school programs at the University of Florida in
16 analyzing materials for asbestos or analyzing other
17 materials using what's called a transmission electron
18 microscope?

19 A. The first part of the question is no. We
20 weren't analyzing asbestos samples in graduate school.
21 But in our materials science department we had two
22 transmission electron microscopes: one scanning
23 electron microscope, X-ray diffraction; and as a
24 graduate student, you are expected to use all those
25 instruments.

1 We did graduate level training in transmission
2 electron microscopy, how to do diffraction; selected
3 area of diffraction, energy dispersive and the science
4 behind it. The same with scanning electron
5 microscopy -- not asbestos, but mineral particulates
6 that you would have to characterize the same way you
7 do asbestos fibers.

8 Q. When did you obtain your Ph.D. in materials
9 science and engineering?

10 A. I graduated in December 1983.

11 Q. How do you then begin to analyze materials for
12 asbestos -- and you mentioned a company that you
13 started after graduating with your Ph.D. in 1983?

14 A. Yes. I started a company called Microanalytical
15 Laboratories, which was a materials science small
16 company with a -- first with a scanning electron
17 microscope and a transmission electron microscope. A
18 little bit less than a year later, when we started
19 focusing on trying to educate and have people use our
20 facility to analyze air samples for asbestos, that's
21 when the first sample came in.

22 THE COURT: Can everybody hear Dr. Longo?

23 Q. Dr. Longo, tell us a little bit more -- before
24 we get to your work at MAS, tell us about your
25 personal experience analyzing materials for asbestos

1 at this first company called Microanalytical, and how
2 long did you have that first company for?

3 A. When we started getting air samples for asbestos
4 analysis, I was the primary technician. As the person
5 that prepared the samples, analyzed the samples, that
6 was from 1984 until I left that company in August of
7 1987. I don't know how many hundreds or thousands of
8 samples that were done, hundreds to thousands of air
9 samples done over those three years. So I had quite a
10 bit of experience doing that. We had a technician we
11 finally hired that was also doing it because the
12 laboratory was getting very busy.

13 Q. Have you been involved in the testing of
14 materials for asbestos now for about 35 years?

15 A. Yes, sir.

16 Q. Let's talk about your company Materials
17 Analytical Services. How did that company get started
18 and how big was it when it began, and how did it
19 evolve over time?

20 A. We opened the doors in February of 1988, and I
21 got involved with it after I left Microanalytical
22 Laboratories. I had a partnership with a big
23 engineering firm called Law Engineering, not lawyers,
24 but Thomas E. Law was the individual who started that
25 company. So we started with a 4000-square foot space,

1 and I had three employees -- myself, a receptionist,
2 and one technician.

3 In 2006 the company grew to almost 100 people.
4 We had a main laboratory outside of Atlanta. We had a
5 materials science semiconductor laboratory in North
6 Carolina. We had a semiconductor laboratory in
7 Phoenix. We had a semiconductor laboratory in San
8 Jose and consulting offices in California and
9 Washington, D.C. where we had employees that were in
10 both of those.

11 Q. Can you tell Judge Wolfson basically the current
12 setup of Materials Analytical Services in terms of the
13 space you have and how many people you employ and what
14 type of professionals do you employ at MAS?

15 A. After 2006 we had only the Suwanee office which
16 is a 20,000 square foot laboratory that has multiple
17 transmission electron microscopes, multiple scanning
18 electron microscopes, optical microscopes, as well as
19 all -- a lot of other types of analytical equipment
20 for organic analysis.

21 The staff is made up of the administration
22 people and technicians. We have microbiologists, we
23 have other materials scientists, we have physicists,
24 we have biologists, we have geologists -- I don't want
25 to leave anybody out -- inorganic chemists, organic

1 chemists, and optical microscopists who have degrees
2 in geology, or something related, electron
3 microscopist specialist.

4 I think that covers it. We have approximately
5 43 people currently.

6 Q. Does Materials Analytical Services only test
7 materials for asbestos, or do they do a broader range
8 of work and have they done a broader range of work
9 presently and over time?

10 A. We do a broader range of work. Asbestos is
11 still one of our key samples that we analyze, but we
12 also analyze and do work for environmental testing for
13 metals, organics.

14 The volatile organic compounds, VOC testing,
15 such as the green labeling that is being done across
16 the country where companies want to understand what is
17 being released from the products that are made that
18 have volatile organic compounds.

19 For example, the new car smell that everybody
20 likes. That's volatile organic compounds being
21 released by the plastic rugs; it is supposedly not
22 that good for you. We do a lot of that and
23 certifications.

24 We also do materials science work,
25 semiconductor work, failure analysis outside of the

1 area of asbestos. We work not for the FDA, but we do
2 work in pharmaceutical areas where we have an FDA
3 laboratory number.

4 So our laboratory can analyze and receive
5 prescription drugs from Schedule 2 on down and store
6 them so that we also have a DEA license so we can
7 receive these materials and test it. So we're pretty
8 broad-ranged.

9 Q. Dr. Longo, looking at your slide here, it has
10 EPA Peer Review Group, and, in a parenthetical, it
11 says "asbestos." Have you ever been selected to serve
12 on any EPA peer review group related to asbestos or
13 asbestos-testing methodology?

14 A. Yes.

15 Q. Can you tell the Court about that.

16 A. I was on initially the EPA peer review group for
17 their asbestos engineering program where scientists
18 from this country as well as Canada were invited to
19 come to the Environmental Protection Agency office in
20 Cincinnati and provide opinions, guidance on where the
21 Environmental Protection Agency should put their
22 research into to solve asbestos problems.

23 Q. Was that a group of professionals that had
24 expertise in the methodologies for testing asbestos or
25 samples to determine if they had asbestos?

1 A. It is more broad than that. It is not only
2 testing asbestos, testing samples for asbestos, but it
3 was managing asbestos projects, suggestions on
4 removing asbestos. So it was broad range.

5 The second panel I was on was EPA invited just
6 microscopists to help them develop a method for
7 analyzing building dust for asbestos.

8 Q. Going back to the first one, you said "EPA Peer
9 Review Group Panel." How many other professionals
10 were selected to serve on that EPA Peer Review Panel?

11 A. For the small working group there were four to
12 five.

13 Q. When was that?

14 A. That was in late 1980s, '89, '90, and I think
15 the last one was in 1991 or so.

16 Q. You began to tell the Court about another
17 collaboration with the EPA on developing a particular
18 test method. Can you tell the Court about that?

19 A. EPA was interested in getting a standardized
20 method for analyzing asbestos contaminated building
21 dust or dust not in a building where they could
22 measure and determine the concentration of asbestos
23 structures per area of dust that they sampled. We
24 worked on that for multiple days. They issued a draft
25 report and then decided that the best avenue to get

1 this into the public domain was to go and put it into
2 the ASTM committee.

3 Q. Why was that important from a public health
4 standpoint developing a method to look at dust that
5 had settled on the surface in a building to determine
6 if it contained asbestos; and, if so, how much
7 asbestos?

8 A. It was important in that if you had asbestos in
9 buildings at this time period, you had to manage it --
10 meaning, if you had fireproofing asbestos,
11 fireproofing up in the building, and you have a drop
12 ceiling, like we have here, over time that
13 fireproofing will release asbestos dust just from
14 building vibration, from age, from gravity, and the
15 top of the ceiling tiles get contaminated with
16 asbestos dust.

17 Workers who have to remove ceiling tiles or
18 change lights have to know there is significant
19 contamination on these ceilings, or a building that
20 has asbestos fireproofing where you don't have a
21 ceiling -- like mechanical rooms, et cetera, the dust
22 that's being released causing contamination. So this
23 gave a method you could make those measurements and
24 they wanted to standardize it.

25 Q. Did that initial collaboration you had with the

1 EPA on developing this method ultimately turn into
2 what's known as ASTM 5755, or D-5755?

3 A. Yes, sir.

4 Q. Did you take any leadership role -- or what was
5 your role in the authorship or the creation of the
6 ASTM testing method?

7 THE COURT: When was this?

8 THE WITNESS: This started in 1990 and ended
9 in 1995.

10 Q. What does ASTM stand for?

11 A. It is the American Society For Testing of
12 Materials. It is now always ASTM International. I
13 still call it the American Society of Testing
14 Materials.

15 Q. In testing materials for asbestos, why is it
16 important to have published standards such as
17 standards from the ASTM?

18 A. It is important that if you are using an ASTM
19 method and you say you are using the D-5755, then
20 other labs who are familiar in using that method you
21 can compare the results. So you are standardizing the
22 testing because changing the testing method can change
23 the result. So you always want to have a standardized
24 method like this where everybody understands what is
25 being done, how the recipe goes from A to Z, and the

1 meaning of the results.

2 Q. All right. Can you just briefly tell us -- we
3 have a slide here which has the cover page of ASTM
4 D-5755, and it has a number of signatures on it, and
5 it has some bullets about your involvement.

6 Can you tell us about the process of creating
7 the standard and what the signatures on the cover page
8 represent to you?

9 A. Creating a standard that everybody agrees on is
10 a long process. You essentially have a subcommittee,
11 the committee, then the overall membership of ASTM.
12 Getting a standard through, you have to get agreement
13 from all the scientists who are present and
14 nonscientists. One negative vote can send this back
15 to rewrite.

16 So after six months a new document would go
17 out for voting. It wasn't so much on the actual how
18 to do the method; it is the language that goes into
19 it. My opinion, it is one of the most peer-reviewed
20 documents, ASTM standards out there.

21 Q. Does the ASTM-5755 method contain a test
22 protocol for testing asbestos materials with the
23 transmission electron microscope?

24 A. Yes, sir, it does.

25 Q. Is that one of the methods you followed in this

1 case in testing Johnson & Johnson's talc for asbestos?

2 A. Yes, sir.

3 Q. Today will we be going through portions of this
4 ASTM 5755 and showing the Court portions of this
5 standard and showing how you follow this standard in
6 testing Johnson & Johnson talc for asbestos?

7 A. Yes, sir.

8 Q. The slide says: "Leadership on ASTM D-22
9 committee and D 2008.07 subcommittee on sampling and
10 analysis of asbestos." What does that mean and what
11 was your leadership role in that?

12 A. It was our dust method we had developed in our
13 laboratory that ultimately became the method of
14 choice. Since we had already been using something
15 very similar, I was chosen, volunteered to shepherd
16 this through the subcommittee to get it to a standard.
17 That involved five years and hundreds and hundreds of
18 man hours to get agreement across the board from all
19 the different scientists and others on the committee.
20 We would put it together, vote on it; if there was
21 negatives, the next meeting you work through the
22 negatives, and so on and so forth.

23 Q. In terms of achieving a scientific consensus on
24 the ASTM 5755, did that involve obtaining the
25 agreement of the others in voting on the standard and

1 serving on the committee?

2 A. Yes.

3 Q. Did that include Drew Van Orden?

4 A. It did.

5 Q. Is Drew Van Orden with a group called RJ Lee who
6 serve as experts for Johnson & Johnson in talc cases?

7 A. Yes.

8 Q. Did that include someone named Slim Thompson who
9 is a representative of the industry of a company that
10 mines and produces talc?

11 A. Dr. Thompson, that was his nickname, "Slim."

12 Q. Did that include Dr. Jim Millette who has
13 published in the literature and used to work for the
14 EPA and studied the issues of asbestos and talc?

15 A. Yes.

16 Q. Did that include Michael Beard?

17 A. Michael Beard was in charge of the analytical
18 side at the Environmental Protection Agency for
19 asbestos. After he passed away, we now have the
20 Michael Beard Conference on asbestos in Johnson,
21 Vermont, every two or three years.

22 Q. Going back to this cover slide here, can you
23 tell the Court about the certifications that Materials
24 Analytical Services has that are relevant to the
25 testing of materials for asbestos? What

1 certifications does MAS have?

2 A. The primary certification for testing of
3 asbestos is the NVLAP, which stands for the National
4 Voluntary Laboratory Accreditation Program that's run
5 by NIST, the National Institute of Standard and
6 Technology. That is the certification for analyzing
7 asbestos bulk samples and asbestos air samples by TEM
8 on behalf of the EPA for their AHERA regulations
9 Asbestos Hazard Emergency Response Act.

10 Q. How did your lab obtain the certification from
11 NVLAP as it relates to asbestos, and how does your lab
12 continue to be recertified for testing asbestos?

13 A. After the AHERA Act was passed, I think in 1988
14 or so, they knew they had to get a certification
15 process going. When that started -- I forget if it
16 was '89 or '90 or '91 or so, we started participating.
17 Really, you have to do certain types of analysis,
18 certain types of checklists, quality control, and so
19 on and so forth, put it together; then every two years
20 or so, an auditor will come to your laboratory and
21 spend a week there looking at all the documents and
22 see how well you are following their protocols for
23 keeping that accreditation.

24 Q. Is your lab certified by a group called AIHA,
25 and what does that stand for?

1 A. That's the American Industrial Hygiene
2 Association. We have their certification for doing
3 phase contrast microscopy for asbestos fibers or
4 fibers. PCM it is called. They also certify us in a
5 lot of organic chemical analysis and a lot of
6 inorganic analysis, as well as mold analysis. We had
7 that I think since 2000 maybe.

8 Q. Is your lab certified by a group called ISO, the
9 International Standard Organization? Can you tell us
10 about that?

11 A. We have some ISO certifications that's run by
12 the American Association of Independent Labs. For
13 certain types of analysis that we do for VOC, volatile
14 organic compound analysis, and we also are certified
15 to look at others who test for volatile organic
16 compounds, and furniture and materials that certify
17 the analysis is okay.

18 Q. Does your lab have an FDA lab number, and can
19 you tell us what that is, and describe the process
20 that MAS had to go through to obtain that?

21 A. Getting the FDA lab number is essentially
22 registering, sending in your QAQC manual and other
23 things.

24 Q. What is "QAQC" and how did you refer to that?

25 A. Quality Assurance and Quality Control. They

1 pretty much leave you alone until at some point they
2 will audit your laboratory to make sure you are
3 following the rules and regulations.

4 Q. How does that work? Do they give you a certain
5 amount of notice? How does that work when the FDA
6 comes and looks at your lab to make sure your quality
7 control and quality assurance is sufficiently reliable
8 to obtain an FDA lab number?

9 A. The auditors show up unannounced.

10 Q. Now, I want to talk about some of the states,
11 municipalities, and state agencies that you and
12 Materials Analytical Services have consulted with
13 specifically on issues of asbestos. Let's start with
14 the Port Authority of New York and New Jersey as an
15 example.

16 A. Beside them and others, we were asked to take a
17 look at the asbestos fireproofing and asbestos
18 acoustical plasters, asbestos ceiling tiles to
19 determine if by reverse engineering these asbestos
20 materials, fireproofing, could we determine who
21 manufactured the product. It is called product ID,
22 and we could. Once you get the formulations for the
23 various fireproofing.

24 So New York and New Jersey, all their public
25 buildings, including the World Trade Center, we were

1 able to analyze and determine who manufactured the
2 asbestos-containing fireproofing. If it had a certain
3 kind of ingredients, chrysotile, gypsum and
4 vermiculite with no starch, that was W. R. Grace
5 Monokote III.

6 Q. Did that involve some of the same types of
7 analyses that you have done in testing Johnson &
8 Johnson's talc for asbestos in terms of the type of
9 microscopy followed and the steps followed according
10 to the generally-accepted methods?

11 A. Yes, the polarized light microscopy is the
12 standard PLM analysis, and the TEM was used to verify
13 and identify the asbestos fibers using the standard
14 techniques and then going further to identify the
15 other nonasbestos minerals to compare to the formulas
16 for those products.

17 Q. Can you give us a representative listing, to the
18 best of your ability, of states, municipalities and
19 state agencies that have hired Materials Analytical
20 Services to analyze materials for asbestos?

21 A. The city of New York, the state of New York, the
22 city of Baltimore, the city of Boston, the school
23 district in Chicago, the state of Utah, the state of
24 Texas, the state of Hawaii, the Los Angeles school
25 district, the San Francisco school district, and then

1 individual buildings across this country, Prudential
2 Insurance for all of the buildings they owned across
3 this country. So hundreds and hundreds, thousands of
4 buildings we were asked to see if we could determine
5 who manufactured the asbestos products.

6 Q. Do you think you could sort of give us a brief
7 summary, maybe 30 seconds or so, on any work that MAS
8 has done for the CDC, NIH, NASA, and the Air Force, if
9 it doesn't relate to asbestos, but just give us a
10 general overview of work for those entities.

11 A. For the Center of Disease Control and National
12 Institutes of Health we did some high resolution
13 scanning electron microscopy work for them. They
14 wanted to image in one case the Ebola virus and the
15 other case, the AIDS virus.

16 NASA was some work we did for an X-ray
17 telescope they were going to launch that had to have
18 very precise analytical work done on chips they were
19 using.

20 The Air Force was to look at some chips that
21 had to be essentially fixed by removing areas
22 microscopically and generating microscopic jumper
23 cables to get around types of areas there that were
24 not working.

25 THE COURT: Mr. Block, I don't want to

1 interrupt your presentation. As you know, we have a
2 limited time period today, and, frankly, we spent
3 about 45 minutes, a little bit of it was about TEM,
4 but if you want to be helpful to me, I would like to
5 get to the substance of what we are doing today.

6 MR. BLOCK: I sure will, your Honor.

7 May I have a minute to address Dr. Longo's
8 work in litigation? I know it will be brought up on
9 cross.

10 THE COURT: That's fine. You are going to eat
11 into your own time before you get to what you want me
12 to hear.

13 Q. Dr. Longo, have you done work in litigation for
14 states, municipalities and state agencies including
15 ones you have named today?

16 A. Yes, sir.

17 Q. Relating to the analysis of asbestos?

18 A. I have.

19 Q. Have you been working for corporate defendants
20 in analyzing materials for asbestos including General
21 Electric?

22 A. Yes, sir.

23 Q. Has General Electric come to you when there was
24 an allegation that there was asbestos that would be
25 released when people used their hair dryers, and have

1 you done that analysis for General Electric?

2 A. Yes, sir I have.

3 Q. Have you done work for Scotts, Scotts
4 fertilizer, in cases where there was an allegation
5 their materials released asbestos into the air?

6 A. Yes, sir.

7 THE COURT: Can I get time periods for these
8 as well when you were doing that kind of work? For
9 instance, GE you mentioned. When did you do that?

10 THE WITNESS: The GE work has been in the last
11 five years.

12 THE COURT: All right.

13 Q. And Scotts fertilizer, was that a case where you
14 were the opposing expert where my law firm brought the
15 case?

16 A. Yes, sir.

17 Q. Where one of my law partners Moshe Maimon, he
18 took your deposition in that case; didn't he?

19 A. Yes, sir, he did.

20 Q. And you have done work on behalf of plaintiffs
21 and hired by plaintiffs law firms, like my firm Levy
22 Konigsberg. Correct?

23 A. That is correct.

24 Q. Are the methods that you used -- no matter if
25 you are hired by a corporation, a defendant in

1 litigation, a state agency or individual plaintiffs,
2 does your reliance on the generally-accepted methods
3 differ depending on who hires you?

4 A. No, it doesn't.

5 Q. Dr. Longo, I'm sure you will be asked, and I
6 think in the briefs in this case you may have been
7 referred to as the \$30 million man. Have you heard
8 yourself referred to as the \$30 million man by Johnson
9 & Johnson?

10 A. A number of times.

11 Q. Now, in the course of over 30 years, has
12 Materials Analytical Services, the company billed out
13 about \$30 million for work on behalf of plaintiffs in
14 asbestos litigation, which comes to about a million
15 dollars a year?

16 A. Yes, sir, it has.

17 Q. And does MAS have substantial expenses in terms
18 of the payroll of all those professionals that you
19 identified earlier?

20 A. Of course.

21 Q. Does MAS have to purchase the most state of the
22 art equipment, such as transmission electron
23 microscopy, to make sure its scientific methods use
24 the best equipment available?

25 A. We have to keep the equipment up to date or at

1 least modified to work up to date.

2 Q. How expensive is a state of the art TEM
3 microscope, the type MAS has to purchase from time to
4 time?

5 A. When we first purchased the ones we have, they
6 were a quarter of a million dollars. We purchased one
7 last year that was \$750,000, but determined that it
8 did not work as well as the older ones, and we sent it
9 back.

10 Q. Dr. Longo, quickly, and I want to note for the
11 Court it is in the tabbed notebook, if the Court
12 wishes to look at it.

13 We have your CV, and does your CV set forth
14 peer-reviewed articles you have written on asbestos
15 and other topics?

16 A. Yes, sir.

17 Q. And also scientific presentations you have
18 given?

19 A. Yes, it does.

20 Q. We have also included for the Court a tab 2,
21 which lists cases in which you have testified in which
22 there have been some sort of Daubert, Frye, or other
23 scientific challenge to your testimony. Is that a
24 list your office generated?

25 A. Yes, sir.

1 Q. We highlighted the rows in yellow on tab 2 that
2 relate to Johnson & Johnson cases.

3 The next slide, does this show 17 occasions
4 now where you have testified involving your findings
5 of asbestos in Johnson & Johnson's talc?

6 A. Yes, sir, it does.

7 Q. In those 17 cases did you testify about the same
8 generally-accepted methodologies that you used that
9 you are prepared to testify in this case and that you
10 have set forth in your expert report?

11 A. Yes, sir.

12 Q. And just to note, has it now been seven
13 states -- California, New Jersey, Missouri, Oklahoma,
14 South Carolina, New York, Kentucky -- were you in
15 Kentucky yesterday testifying?

16 A. In Louisville.

17 Q. Was that a Daubert hearing in that case?

18 A. Yes, sir.

19 THE COURT: Was that state court?

20 MR. BLOCK: Yes, sir.

21 THE COURT: New Jersey didn't follow Daubert
22 until last year.

23 MR. BLOCK: I think most of the courts follow
24 Daubert.

25 THE COURT: I understand you are not prepared

1 to represent every one of those states follow Daubert.
2 New Jersey did just change in the last year.

3 MR. BLOCK: Yes, I understand that.

4 Q. Dr. Longo, in terms of state versus federal
5 court, have you testified on many occasions in federal
6 court where there is a Daubert or Frye challenge to
7 your testimony before taking the stand?

8 A. Yes, sir.

9 Q. Is that listed on tab 2?

10 A. It is.

11 Q. Dr. Longo, I would like to ask you what is
12 asbestos, and I would like you to explain to the Court
13 what is on this slide. It has Table 3, "Chemical
14 Formulas For the Asbestos Minerals." What does this
15 slide show and where did this image come from?

16 A. The slide shows what the chemical formulas are
17 for these particular minerals. Asbestos is a trade
18 name, and it encompasses these specific minerals,
19 which are labeled asbestos if they are fibrous.

20 Q. This says "asbestos minerals," and it comes from
21 the McCrone Particle Atlas. What is that?

22 A. That was an atlas that just not only had
23 asbestos but provided a lot of information on how to
24 analyze minerals using polarized light microscopy.
25 Dr. Walter McCrone, in my opinion, during his time,

1 was one of the best microscopists in the world.

2 Q. Was Walter McCrone in terms of this particle
3 atlas, was he a consultant for Johnson & Johnson for
4 decades, including at the time of this publication in
5 1980?

6 A. I'm not clear he was actually a consultant. I
7 know his laboratory for decades, McCrone Associates,
8 did work for Johnson & Johnson. He pretty much was
9 running the McCrone Research Institute at a time after
10 -- about sometime in the '60s and '70s.

11 Q. We have circled three of these asbestos minerals
12 which shows the chemical formula for these asbestos
13 minerals. Why did we circle these three in particular
14 as it relates to Johnson & Johnson talc?

15 A. These are the three asbestos minerals that have
16 been identified over the years, not only by Johnson &
17 Johnson in their laboratories, but it's the general
18 type of asbestos that our laboratory is finding in the
19 talcum powder that's in Johnson & Johnson.

20 Q. Are these three types of asbestos minerals --
21 tremolite, actinolite, anthophyllite known as
22 amphiboles?

23 A. Yes, sir, they are.

24 Q. Are they specifically identified in the
25 published literature and in materials you rely upon

1 and that people in your field regularly rely upon as
2 being the types of amphiboles that are known as
3 asbestos minerals, these particular types of
4 amphiboles?

5 A. Yes, sir.

6 Q. Now, in terms of an asbestos mineral, and
7 whether it can be called asbestos or asbestiform, what
8 does this next slide show from the McCrone Particle
9 Atlas?

10 A. In order to be called asbestos, or if you want
11 to say asbestiform, this shows it has to be fibrous.

12 Q. So on one side it says, for example, fibrous
13 tremolite would be asbestos, and then does it say the
14 same thing for fibrous actinolite and fibrous
15 anthophyllite?

16 A. Yes, sir it does.

17 Q. If an asbestos mineral such as tremolite,
18 actinolite and anthophyllite is fibrous, is it
19 asbestos?

20 A. Yes, sir, it is.

21 Q. On the other hand, if it is non-fibrous, such as
22 non-fibrous tremolite, non-fibrous actinolite,
23 non-fibrous anthophyllite, would that be considered
24 asbestos?

25 A. No.

1 Q. In terms of fibrous, these asbestos minerals
2 like tremolite are fibrous, are there generally-
3 accepted methods that allow you to determine whether
4 it is fibrous?

5 A. Yes, sir, there are.

6 Q. If the asbestos mineral meets the chemistry of
7 asbestos and is in the shape of a fiber, as defined by
8 the generally-accepted methods, is it fibrous?

9 A. Yes. Using these methods, it has a specific
10 geometry to be called fibrous.

11 Q. We'll get to this in more detail.

12 But is this an example of a definition of
13 fiber from a generally-accepted method, specifically
14 the EPA AHERA method?

15 A. Yes, sir.

16 Q. Here do they define fiber as being at least
17 0.5 microns in length and having an aspect ratio of at
18 least 5-to-1?

19 A. Yes, it does.

20 Q. What is a "micron"?

21 A. A micron is one -- is the distance equal to 1
22 millionth of a meter. If you think about a yard
23 stick, and a meter is approximately 3.3 feet, you
24 would have to slice that 3.3 feet 1 million times
25 evenly, and that would give you 1 micron or

1 1 micrometer.

2 Q. One more requirement here in the EPA AHERA, it
3 says:

4 "And substantially parallel sides," and so
5 according to EPA AHERA is fiber defined as at least
6 0.5 microns in length and having an aspect ratio of
7 5-to-1 or greater and substantially parallel sides.

8 A. Yes, sir.

9 Q. In terms of the aspect ratio, can you explain to
10 the Court what that means? It talks about length
11 versus width.

12 A. The aspect ratio is nothing more than, say, this
13 laser pointer. The length has to be five times equal
14 to or five times greater than the length or the width.
15 You take the length, divide it by the width; that will
16 give you the aspect ratio.

17 Q. Now, is it important to understand in terms of
18 understanding the generally-accepted test methods that
19 asbestos fibers are very small?

20 A. Small in that you cannot see -- you cannot
21 visually see single asbestos fibers because they are
22 too small for the resolution of your eyes. Here is a
23 penny. They have two or maybe rice grains which you
24 can see. Here we have a human hair and a human hair
25 has a diameter on average -- some lower, some higher

1 -- of 100 micrometers. Your eye can see a human hair
2 that 100 micrometers allows you to visualize it. Here
3 we have chrysotile asbestos which looks like some
4 white dots.

5 Q. That's right in front of Abe Lincoln's mouth?

6 A. Right here. What you see, there is thousands
7 and thousands of fibers, not individual fibers. Since
8 the width of an chrysotile asbestos fiber is
9 approximately .05 micrometers, so it is essentially
10 almost a thousand times thinner than a human hair.
11 That's what we are dealing with when we are making
12 these measurements.

13 Q. Dr. Longo, why does talc --

14 MS. BROWN: Your Honor, I have an objection to
15 this document as not being disclosed either in his
16 report or his reliance list.

17 MR. BLOCK: Your Honor, we have a reference we
18 can give the Court. Your Honor, this was No. 117 on
19 appendix A for Dr. Longo. And Leigh O'Dell can talk
20 further about it. It is part of a meet and confer
21 process. There was no objection to 117 and we relied
22 upon that.

23 MS. BROWN: Your Honor, we subsequently raised
24 the issue with your Honor where you made the ruling,
25 of course, that any supplemental material that was

1 available at the time of the report but not included
2 in the report or listed at the time could not be
3 included at this point, and this document falls
4 squarely into that category.

5 MS. O'DELL: Your Honor, if you recall, during
6 our conversation on Friday afternoon, I asked if an
7 objection was raised to a particular document is that
8 fair, and you said if there is no objection, you may
9 use it. That is the decision we made to put it in.

10 THE COURT: Take it out.

11 BY MR. BLOCK:

12 Q. Without reference to the document, did you come
13 up with the idea that talc should be tested for
14 asbestos or is that something represented in the
15 peer-reviewed literature going back many decades?

16 A. At this time, depends on what type of talc. It
17 goes back many decades for industrial talc. We have
18 been testing that for many years.

19 For cosmetic talc there was essentially --

20 THE COURT: Your lab has been testing for many
21 years.

22 THE WITNESS: It is the royal "we."

23 THE COURT: You asked him the question about
24 -- your question was: Did you come up with the idea
25 talc should be tested?

1 MR. BLOCK: I withdraw the question and I'll
2 rephrase it.

3 BY MR. BLOCK:

4 Q. In general, why does talc, a mineral that's
5 mined from the earth, need to be tested for asbestos?

6 A. In general, because of the accessory minerals
7 associated with talc that is typically either what we
8 call the tremolite solid solution series or the
9 anthophyllite solid solution series, and, in some
10 cases, chrysotile asbestos. That has been mined in
11 talc mines for some time.

12 Q. In contrast, a raw material such as cornstarch
13 that has been used by Johnson & Johnson in a baby
14 powder called Cornstarch Baby Powder, does cornstarch
15 need to be tested for asbestos?

16 MS. BROWN: Objection. Lacking foundation.
17 This is outside of his opinions. He tested J&J
18 products. He is not a mineralogist or a geologist.
19 He never tested cornstarch. I think we are going a
20 little far afield with these questions.

21 THE COURT: Mr. Block, it was not explored by
22 him. Let's move on.

23 BY MR. BLOCK:

24 Q. Let's talk about the testing Materials
25 Analytical Services did for the MDL as set forth in

1 your report, which is tab 9 in the notebook that we
2 have provided.

3 Just in general, just to summarize, did
4 Materials Analytical Services test 71 samples that
5 consisted of 56 -- Johnson's Baby Powder or Shower To
6 Shower talc product containers, as well as 15
7 historical talc samples that represented talc that was
8 used in Johnson & Johnson talc products?

9 A. Yes, sir. Just to be clear, the 71 -- or
10 samples that came from 71 individual containers or
11 from the railroad car. There was one MDL sample that
12 had two samples from the same container. That would
13 have made it 72 total samples.

14 Q. Were these samples that to your understanding
15 were produced as part of the discovery process in this
16 MDL?

17 A. Yes, sir.

18 Q. Is it your understanding those product samples
19 were retained by Johnson & Johnson and Imerys during
20 the time of their existence and produced in the MDL
21 for testing by both sides?

22 A. Yes, sir, that's my understanding.

23 Q. In terms of the talc that's contained in the
24 containers of Johnson & Johnson's products you tested
25 and the source talc that you tested, did it include

1 Vermont talc?

2 A. It did.

3 Q. Is it your understanding that Vermont talc was
4 used to make Johnson & Johnson talc products from
5 approximately 1967 until approximately 2003?

6 A. Yes.

7 Q. Is it your understanding before 1967 and going
8 back many decades Johnson & Johnson used Italian talc
9 with the exception of a few years during World War II?

10 A. Yes, sir, that's my understanding.

11 Q. Is it your understanding starting in
12 approximately 2004 going to the present, that Johnson
13 & Johnson has used Chinese talc?

14 A. Yes, sir.

15 Q. Let's talk about the methods that Materials
16 Analytical Services used for testing Johnson &
17 Johnson's talc for asbestos.

18 Did Materials Analytical Services use test
19 methods using the polarized light microscope?

20 A. Yes.

21 Q. And the transmission electron microscope
22 pursuant to generally-accepted methods that MAS and
23 yourself published on in the peer-reviewed literature?

24 A. Yes, sir.

25 Q. As we move forward, will we be talking about

1 some of these studies and how the methods were applied
2 to this case, including a publication in Cancer
3 Research in 1995 and other publications that are shown
4 here and included in tabs 10, 11 and 12 for the Court?

5 A. That is correct.

6 Q. Now, in terms of the key concepts for testing
7 asbestos and talc, can you talk about the first two
8 concepts and how they influence the third item which
9 is limit of detection/sensitivity?

10 A. The preparation method is key to determine how
11 well or sensitive the analysis is going to be for both
12 PLM and TEM. The analytical tools for PLM and TEM are
13 the best instruments for doing this for asbestos. It
14 has its strengths and its weaknesses. But it's all
15 about the preparation on how sensitive your results
16 are going to be in the TEM and PLM.

17 Q. In laymen's terms, does the preparation method
18 relate to whether you are just going to put the talc
19 that comes out of the container under the microscope
20 or whether you are going to follow some other
21 generally-accepted procedure preparing the talc sample
22 in some way before you look at it under the
23 microscope?

24 A. Yes. You could do both. But for the TEM
25 analysis, the best method is to try to concentrate the

1 potential amphibole asbestos that might be present so
2 that you could remove the interference of all the talc
3 that causes a problem with the analysis.

4 Q. Did you use a preparation method in testing
5 Johnson & Johnson's talc for asbestos known as the
6 Heavy Liquid Separation Method?

7 A. Yes, sir, we did.

8 Q. Was there a publication in the peer-reviewed
9 literature by Doctor Alice Blount published in 1991 in
10 a journal called Environmental Health Prospectus?

11 A. Yes, sir.

12 Q. Is that part of the National Institute of
13 Environmental Health Sciences, which is part of the
14 U.S. Department of Health and Human Services?

15 A. Yes, sir, it is.

16 Q. At the time is it listed at the bottom of the
17 article that Dr. Blount at that time was a professor
18 and researcher in the Rutgers Department of Geology?

19 A. Yes, sir.

20 Q. What did Dr. Blount -- if you could quickly sum
21 up, what did Dr. Blount report in this peer-reviewed
22 study about the heavy liquid separation method as it
23 specifically relates to testing talcs for amphibole
24 types of asbestos?

25 A. What she reported, that using this separation

1 method increased the sensitivity by removing a lot of
2 the talc particles. She estimated maybe 1 amphibole
3 potential for every, I think it was, 100,000 talc
4 particles.

5 So she reported how it increased the
6 sensitivity and allowed her to analyze it in a much
7 more efficient way, and showed that it is there, and
8 by removing the talc, first, it caused her to be able
9 to report higher sensitivities for the analysis using
10 polarized light microscopy.

11 Q. We have an animation which is hopefully going to
12 run. What are we looking at in this animation?

13 A. We are looking at a test tube. It shows if you
14 put talc in it and if you then put the heavy liquid
15 density in, then mix the talc up in the heavy liquid
16 density, and put it into a centrifuge, spin it, and
17 because of the density of the liquid, anything that
18 has a lower density like talc will go to the surface.
19 Anything that has a heavier density like the amphibole
20 asbestos will go to the bottom of the test tube. So
21 you are concentrating the amphibole minerals and other
22 minerals that have the higher density at the bottom,
23 which makes the analysis more sensitive and more
24 efficient.

25 Q. Now, is amphibole asbestos, particularly the

1 types tremolite, anthophyllite and actinolite, the
2 most common types of asbestos found in talc?

3 A. Yes, sir. It is the anthophyllite series and
4 the tremolite series. That is the most common. Then
5 chrysotile can be found also. For amphiboles, it is
6 the tremolite series and anthophyllite series.

7 Q. Is the idea here just in laymen's terms that you
8 put the heavy liquid into the tube, you centrifuge it
9 and it causes the heavy minerals, which would include
10 certain types of amphibole asbestos, to sink to the
11 bottom, and results in the talc which is lighter to
12 float to the top?

13 A. Yes.

14 Q. Then in terms of what you are analyzing, are you
15 then analyzing this tip at the bottom where the
16 amphibole asbestos is more likely to be, if it is
17 present, and can be detected by the method?

18 A. Yes. That's what we removed to put onto the
19 filters we are preparing; or the glass slides we're
20 preparing for both polarized light microscopy as well
21 as transmission electron microscopy.

22 Q. This heavy liquid preparation method for testing
23 talc for asbestos, was it published in the open
24 literature for the first time to your knowledge in
25 1991?

1 A. To my knowledge, that's when it was published
2 for analyzing talc for asbestos. Heavy liquid density
3 separation has been used for years and years and years
4 in the mineral industry to remove different density
5 minerals.

6 Q. Did it come to your attention as the result of
7 litigation against Johnson & Johnson, including this
8 case, in fact Johnson & Johnson had been using
9 internally with its consultants the heavy liquid
10 preparation method going back to the 1970s?

11 A. Yes, sir. As far as I can tell, it was first
12 developed specifically for talc in 1973, I believe it
13 was, or 1974.

14 Q. Were there a number of consultants where Johnson
15 & Johnson was having confidential work done where
16 those consultants were using the heavy liquid
17 separation method to identify asbestos in talcs used
18 by Johnson & Johnson for its products?

19 A. It is either using heavy liquid density or
20 another type of concentration method such as flotation
21 to try to remove the fines to increase the
22 sensitivity.

23 Q. Let's look at one example, if we could, for the
24 Court.

25 Is this a confidential memo produced by

1 Johnson & Johnson in this case, subject to a
2 protective order, that shows the use of the heavy
3 liquid separation preparation method on Vermont talc
4 for Johnson & Johnson in 1974?

5 A. Yes, sir, it does.

6 Q. Dr. Reynolds states here that

7 "For the reasons described above, a
8 concentration technique is mandatory because it brings
9 the amphiboles into a reasonable concentration range
10 for optical or other methods of analysis."

11 What is a "concentration technique" and is the
12 heavy liquid separation method an example of a
13 concentration technique?

14 A. "Concentration technique" is you concentrate one
15 type of mineral and remove the other. Panning for
16 gold is a concentration technique using water. Gold
17 sticks to the bottom of the pan as they swirl it, and
18 they're removing the dirt and other materials that are
19 lighter than gold, lower density, as they pour the
20 water out. They keep doing that until they removed
21 everything, and, hopefully, they found some gold
22 flakes. That's, of course, looking for something
23 different but using the same concept.

24 Q. Based upon the testing you have done on testing
25 Johnson & Johnson's talcs for asbestos, do you agree

1 with Dr. Reynolds' statement way back in 1974 that a
2 concentration technique, such as the heavy liquid
3 separation method, is mandatory in order to do the
4 most reliable and sensitive analysis to determine if
5 there is amphibole asbestos present in talc?

6 A. I agree with that statement.

7 Q. Why?

8 MS. BROWN: I object to the extent Dr. Longo
9 is now interpreting what the person who wrote this
10 statement back in the 1970s meant. I think it goes
11 beyond any evidence in the document of a testing
12 method and it is well outside his area of expertise,
13 and now he is speculating what this person meant.

14 MR. BLOCK: Your Honor, I can go to the next
15 question.

16 THE COURT: Okay.

17 BY MR. BLOCK:

18 Q. In terms of the test method, did Dr. Reynolds
19 provide a figure that showed the heavy minerals
20 sinking to the bottom and the talc floating to the
21 top?

22 A. Yes. That's a test tube; it is a centrifuge
23 tube. It shows, after the spin process, they now have
24 separated out the different density minerals talc at
25 the top, the heavy minerals at the bottom, and he's

1 going to take that plunger and pull it up and remove
2 the top portion and go through several washes to make
3 sure they have all the heavy minerals at the bottom.

4 Q. Can you compare -- I guess what you did, you
5 have your tube, and you showed a depiction of how you
6 did the heavy liquid separation method versus what is
7 described in the confidential memo from Dr. Reynolds
8 to Johnson & Johnson in 1974.

9 A. That is a centrifuge tube. It doesn't have
10 anything in it and that red line shows that instead of
11 using a stopper rubber plug and pull out, we use one
12 of the things that is in that paper tray. We flash
13 freeze the tip in liquid nitrogen, and remove the tip,
14 just the bottom tip of the test tube, and then wash
15 that out instead of using a rubber plug type
16 apparatus.

17 Q. Dr. Longo, in terms of what Dr. Reynolds did,
18 did he use the heavy liquid separation method and use
19 the centrifuge, as you described you did in your own
20 testing?

21 A. Yes, sir, it is the same basic method.

22 Q. Did he find fiber form amphiboles in the ore of
23 Vermont talc and the talc product?

24 MS. BROWN: Objection, your Honor. We are
25 going well beyond the stated words here, and Dr. Longo

1 is being asked to interpret this decades old document
2 well outside his area of expertise.

3 THE COURT: I have it. I have the document.
4 I think we are going to the method as opposed to the
5 findings. So let's move on.

6 Q. Back to the method, in addition to Dr. Blount
7 publishing on the heavy liquid separation method, did
8 the International Standards Organization in 2014
9 publish on the test method of the heavy liquid
10 separation method for use in testing talc for
11 asbestos?

12 A. Yes, they did. They issued this in 2014.

13 Q. You may be asked about certain ISO methods on
14 cross-examination by Johnson & Johnson, and I just
15 want to make clear: Is ISO, this particular ISO
16 standard 22262-2, is this the ISO method that is
17 specifically specified for testing talc for asbestos?

18 A. It is. It's the only method I know of that
19 specifically talks about talc and cosmetic talc and
20 how to test it.

21 Q. Does it say so on this slide this method 22262-2
22 is the ISO method to use in testing talc for asbestos?

23 A. Yes, sir, it does.

24 Q. We can see that in subD right there; can't we?

25 A. Yes.

1 Q. Did ISO also in 22262-2 on page 38, as shown in
2 this slide, actually produce a chart that tells you
3 what method to use depending on what type of material
4 you are testing for asbestos?

5 A. It does.

6 Q. Does it say that talc, cosmetic, which typically
7 may contain chrysotile, actinolite, and tremolite
8 asbestos is supposed to be tested in accordance with
9 this particular ISO provision 22262-2.

10 A. Yes, sir, it does.

11 Q. Does it say what is the optimal analytical
12 procedure used in testing talc for asbestos in the
13 last column?

14 A. It says to use centrifuge with the heavy liquid
15 separation as described, same concept as described by
16 Dr. Blount.

17 MS. BROWN: Your Honor, I would object to
18 counsel's characterization of this document as
19 typically found in talc. The title of the column is
20 "typical asbestos type if asbestos is present."

21 THE COURT: I read the heading. I'm aware.
22 Thank you.

23 Q. It says here, "For amphibole either
24 centrifugation and heavy liquid" -- withdrawn.

25 Did you do what ISO 22262-2 specifies as the

1 optimum analytical procedure for testing talc for
2 asbestos?

3 A. Yes.

4 Q. Is it set forth right there on the last column
5 on the right under "Optimum Analytical Procedure"?

6 A. Yes.

7 Q. If we look at the specifics of ISO 22262-2 at
8 page 29 and 30, does it tell you how to do the heavy
9 liquid separation when testing talc for amphibole
10 asbestos?

11 A. Yes, sir. It both tells you how to prepare the
12 sample and then it tells you to go to the 22262-1 the
13 companion methods on this on how to quantify and
14 identify the asbestos amphiboles.

15 Q. I think that's an important addition. I want to
16 make sure that's understood here.

17 THE COURT: Let's take a short break.

18 THE DEPUTY CLERK: All rise.

19 (Recess.)

20 (Continued on the next page.)

21 ///

22

23

24

25

1 THE DEPUTY CLERK: All rise.

2 THE COURT: Thank you.

3

4 **WILLIAM E. LONGO**, resumed.

5

6 DIRECT EXAMINATION (continued)

7 BY MR. BLOCK:

8 Q. Dr. Longo, comparing the 22262-2 heavy liquid
9 separation method set forth there that we could see,
10 and if we look at your report on page 10, did you
11 follow that preparation method as set forth in ISO?

12 A. Yes, sir.

13 Q. Once you did the heavy liquid preparation method
14 on the talc samples, did you analyze the samples under
15 microscopes?

16 A. We did.

17 Q. We are short on time, and you could say a lot
18 about these things, but just give us a brief
19 description of polarized light microscopy and how it
20 works.

21 A. It uses light and it uses polarizers to get the
22 vibrational wavelengths of light to go in specific
23 direction. By doing that, you could cause the
24 minerals you are looking at to demonstrate different
25 characteristics that allow you to identify it,

1 everything -- how fast the light can go through the
2 crystal to if you move the crystal under these
3 polarized light filters, you have certain angles it
4 disappears, and you can determine the refractive
5 indices. It is the standard how you analyze it to
6 identify asbestos. The same method has been used for
7 literally over a century.

8 Q. What is briefly transmission electron
9 microscopy, and how does it compare to PLM, polarized
10 light microscopy in terms of the advantages and
11 disadvantages when you are testing talc for asbestos?

12 A. The advantages are it allows you to get a much
13 higher sensitivity. It allows you to identify the
14 asbestos fibers according to the rules using
15 microchemistry. It allows you to determine the
16 crystalline structure using the diffraction technique.
17 It doesn't use light. It uses electrons. So that
18 because you are using electrons, you could see much
19 smaller size asbestos fibers than you see in the
20 polarized light microscopy because you are using
21 light. It is a much more sensitive instrument, and it
22 is probably the instrument that should be used for the
23 analysis of asbestos for talc.

24 Q. Is there a general consensus in the scientific
25 community as set forth in the published methods as to

1 the three steps that have to be undertaken when doing
2 transmission electron microscopic analysis on a
3 material to determine whether it contains asbestos?

4 A. Yes, there is.

5 Q. We're looking at page 12 of your report, and I
6 circled step No. 1. That is step No. 1?

7 A. It is called morphology, the dimensions of the
8 fiber or bundle of asbestos you are looking at. Step
9 1 has to have an aspect ratio greater than or equal to
10 5-to-1. The length of the asbestos structure has to
11 be at least a half a micrometer in length or greater.
12 It has to have substantially parallel sides so that
13 each side of the asbestos structure essentially is
14 almost straight. You could have a little bit of
15 crookedness, but substantially parallel. That is Step
16 1.

17 Q. What is Step 2 as shown in your report?

18 A. Step 2 is once you have made, that you can see
19 and measure that Step 1 is satisfied, you perform
20 mineral chemistry called energy dispersive X-ray
21 analysis to determine the chemistry of that particular
22 asbestos structure. So it gives you the ability to do
23 that. That's Step 2.

24 Q. What is Step 3 as shown in the slide and in your
25 expert report?

1 A. Step 3 is to perform what's called selected area
2 electron diffraction or SAED, which gives you
3 information on the crystalline structure of that
4 asbestos structure.

5 Q. Have you published in the peer-reviewed
6 literature on this generally-accepted three-step TEM
7 method?

8 A. Yes, sir. The first publication would be in
9 1995 when we analyzed these Kent Micronite cigarettes
10 from the fifties that used crocidolite and other
11 fibers in the filter.

12 Q. In doing that analysis that you published on the
13 peer-reviewed literature, did you have to determine
14 which fibrous materials in the filter of Kent
15 cigarettes were asbestos and were not asbestos?

16 A. Yes, sir.

17 Q. It's right here on the image we could see that
18 you looked at the morphology by transmission electron
19 microscopy you did the chemistry analysis called EDXA,
20 and you did the third step SAED, and you said,
21 "According to EPA protocols," and you cited EPA AHERA.
22 Is that correct?

23 A. That's correct.

24 Q. Is EPA AHERA one of the generally-accepted
25 methods you applied in this case in determining

1 whether there was asbestos in Johnson & Johnson's
2 talcs?

3 A. Yes.

4 Q. To look at another example, was there a
5 conference put on by Dr. Irving Selikoff at Mount
6 Sinai in 1991 which was called "The Third Wave of
7 Asbestos Disease"?

8 A. Yes.

9 Q. Am I holding up the book in my hand right now?

10 A. You are.

11 Q. Did the contributors to this conference and this
12 publication of this book include many of the leaders
13 in the sciences of asbestos, including Dr. Irving
14 Selikoff, Dr. Philip Landrigan, head of occupational
15 medicine at Mount Sinai?

16 A. Yes.

17 Q. Did you and Dr. Victor Roggli have an article
18 published in this third wave book?

19 A. Yes, sir.

20 Q. In that article, did you perform the three-step
21 TEM analysis that you used in testing Johnson &
22 Johnson's talc for the presence of asbestos?

23 A. Yes, sir, we did.

24 Q. If we look at the slide there, can we see the
25 three steps: The morphology by TEM, looking at the

1 chemistry with the EDS, which is also called EDXA, and
2 looking at the crystalline structure, which is SAED?
3 Is that right?

4 A. Yes, sir.

5 Q. Without going through the details of the study,
6 and the Court has this at tab 10 A, did you determine
7 in this study -- did you make findings of tremolite
8 asbestos fibers based upon the same three-step TEM
9 method that you are using in this case?

10 A. Yes, we did.

11 Q. Similar to this case, was one of the tests you
12 did a substance where when you went to test it, you
13 didn't know if it had asbestos or not, you had to
14 determine whether it had asbestos and then what types
15 of asbestos and other minerals?

16 A. Correct, for both the lung tissue and plaster
17 sample.

18 Q. Now, have you also published in the
19 peer-reviewed literature using these
20 generally-accepted methods for transmission electron
21 microscopy and polarized light microscopy that you've
22 used in this case on minerals that contain asbestos as
23 a contaminant as opposed to the product being designed
24 to contain asbestos?

25 A. Yes. Instead of calling it a contaminant, an

1 accessory mineral comes along with the nonasbestos
2 portion mineral. In this case, it is Libby, Montana
3 vermiculite.

4 Q. The article is here, if the Court wishes to see
5 more details, but in short, did you identify amphibole
6 asbestos and, in particular, fibrous tremolite and
7 fibrous actinolite, and other amphibole asbestos in
8 this mineral that's mined from the ground called
9 vermiculite?

10 A. Yes, and also richerite and winchite, which are
11 found in the Libby Montana vermiculite mine.

12 Q. As you did in this case, is one of the
13 generally-accepted methods you used the EPA AHERA
14 method?

15 A. Correct, for the TEM analysis as well as the
16 bulk analysis.

17 Q. And similar to this case, were you publishing
18 here in the peer-reviewed literature on the analysis
19 of a mineral where you found -- it says "often less
20 than 0.1 percent asbestos"?

21 A. Yes, sir.

22 Q. And did you publish in the peer-reviewed
23 literature, even though the material contained less
24 than 0.1 percent asbestos, that you determined that it
25 says here, "significant exposures can still occur that

1 can be in excess of current regulatory exposure
2 limits"?

3 A. Yes. Based on the actual studies we did in this
4 paper.

5 Q. Now, in terms of the three steps, this
6 three-step TEM process, is this really the general
7 consensus that can be found in many methods including
8 ASTM 5755, the method where you led the authorship of
9 that?

10 A. Yes. When we say morphology, the same counting
11 rules, the one aspect ratio or greater, and so on.

12 Q. I want to talk to you about the development of
13 the EPA AHERA method and the relevance of that in this
14 case. Okay?

15 A. Yes, sir.

16 Q. When the EPA AHERA method was developed and
17 promulgated in 1987, did the EPA convene a committee
18 of leading microscopists from private and federal
19 laboratories?

20 A. They did.

21 Q. As a result of the convening of that committee,
22 did the EPA choose a test method to be used for EPA
23 AHERA?

24 A. They did.

25 Q. Is that the test method that's used when

1 asbestos is abated from schools and buildings to
2 assure that once you do the analysis, it is safe for
3 children and building occupants to go back in the
4 building?

5 A. Yes, sir.

6 Q. And it says here the EPA chose to require TEM
7 analysis for four reasons, and it lists them there.
8 What is your understanding of I guess the development
9 of the AHERA method and what is stated here in the
10 preamble of the regulation?

11 A. The development was done through essentially
12 taking what everybody calls the Yamate method and
13 expanded that into what essentially became the AHERA
14 method. It follows Yamate with some modifications.

15 Q. Just to be clear, and you may be asked on
16 cross-examination about the Yamate method, was that
17 developed earlier in time in 1984?

18 A. Essentially it was initially developed in 1981
19 and published as a draft method in 1984. It was never
20 -- it's been only a draft method for EPA and EPA never
21 sent it out as an official method.

22 Q. In terms of the Yamate method, when it came time
23 in 1987 for the EPA to formally adopt a method for TEM
24 testing materials for asbestos, did they adopt EPA
25 AHERA and the method set forth there in 1987?

1 A. Yes, sir, they did.

2 Q. Is that still the EPA AHERA method that exists
3 today in 2019?

4 A. Yes.

5 Q. Now, we looked at this earlier, and I want to go
6 through the general consensus on Step 1, in looking at
7 the morphology, the shape of the structure and the EPA
8 AHERA is the 5-to-1 aspect ratio and the other details
9 you talked about earlier. Correct?

10 A. Yes, that's pretty much the same counting rules
11 for all the standard TEM methods, the American Society
12 of Testing Materials, International Standard
13 Organization, and EPA. They all use the counting
14 rules to determine the morphology.

15 Q. Does the preamble to the EPA AHERA regulations
16 discuss why the EPA decided to have a 5-to-1 aspect
17 ratio requirement for determining that a material is
18 asbestos assuming the other steps of the method are
19 satisfied?

20 A. Yes, sir. They have published why they picked
21 5-to-1.

22 Q. And here it says:

23 "It is consistent with the panel of
24 microscopists' observations that asbestos structures
25 have aspect ratios equal to and greater than 5-to-1,

1 whereas the majority of nonasbestos structures
2 minerals and particles -- for example, Gypsum -- have
3 aspect ratios of less than 5-to-1."

4 Do you see that?

5 A. I do.

6 Q. Is that consistent with your opinion and the
7 general scientific consensus in the scientific
8 community?

9 A. Yes, it is.

10 Q. If we go to the next slide, which is tab 22, Dr.
11 James R. Millete, did he publish in the peer-reviewed
12 literature about the importance of the 5-to-1 aspect
13 ratio?

14 A. Yes, sir, he did.

15 Q. What does he say and what, if at all, do you
16 rely upon in terms of your expert opinions in this
17 case?

18 A. Well, he states from earlier work by Campbell in
19 the Bureau of Mines, where they state that the best
20 indicator aspect ratio discriminator for asbestos
21 versus nonasbestos fibers is this 5-to-1 aspect ratio
22 used in these TEM methods. Again, we're talking about
23 transmission electron microscopy for all these
24 different methods that use that same definition for an
25 asbestos fiber for the morphology and aspect ratio.

1 Q. Going back to the previous slide, does it
2 indicate some commentators, some people who
3 participated in the EPA AHERA regulation process
4 suggested that the aspect ratio should really be
5 10-to-1?

6 A. Yes. As it states right there.

7 Q. Was that rejected by the EPA for the reasons set
8 forth right there in the preamble the Court could find
9 at tab 20 of the notebook?

10 A. Yes, it was.

11 Q. So in terms of the general consensus of using
12 the 5-to-1 aspect ratio, substantially parallel sizes
13 of at least 0.5 microns in length, do we see that in
14 ASTM 5755 as well?

15 A. Yes. This is the standard method for most all
16 your transmission electron microscopy protocols.

17 Q. Looking at ISO 22262-1 and -2, I want to ask you
18 about this, Dr. Longo. It says, "Fiber elongated
19 particle which has parallel or step sides."

20 Do you see that?

21 A. Yes, sir.

22 Q. What does "step sides" mean?

23 A. If you go down the fiber there may be a step
24 down showing where another fiber has broken and you
25 have a continuation. So it is like a step down, one

1 step down. Sometimes you could have two steps down.

2 Q. It says:

3 "Note: For the purpose of this part of ISO
4 22262-2, a fiber is defined to have an aspect ratio
5 greater than or equal to 3-to-1."

6 Do you see that?

7 A. Yes, sir.

8 Q. Now, why did you apply the 5-to-1 aspect ratio
9 requirement in applying ISO 22262 in testing Johnson &
10 Johnson's talc if it has a note here saying you could
11 have 3-to-1?

12 A. We wanted to stick with the standard counting
13 protocols in all these different TEM methods including
14 the ISO 13794, if I recall correctly. That also has
15 greater than or equal to 5-to-1 aspect ratio as well
16 as particle sides.

17 Q. Is the 5-to-1 aspect ratio you used more
18 restrictive?

19 A. Than 3-to-1, yes, sir.

20 Q. In terms of the reference to ISO 13794, does it
21 reference the 5-to-1 aspect ratio that we have been
22 discussing today?

23 A. Yes, it does.

24 Q. Is that another reason why you used it, because
25 it is stated and adopted and incorporated there, and

1 it is also more conservative and consistent with the
2 scientific consensus?

3 A. Correct.

4 Q. Let's go through some examples of your testing
5 in this case.

6 MR. BLOCK: And here, your Honor, we are
7 looking at a 1978 Johnson's Baby Powder sample.

8 Q. And let's go through Step 1.

9 What are we looking at here, and does it
10 satisfy Step 1?

11 THE COURT: Why don't you identify where this
12 is located, please.

13 MR. BLOCK: This is located in tab 9 A of your
14 notebook. It is also located in Dr. Longo's test book
15 binder, which is Exhibit 2, and we have the Bates
16 numbered page on there for your reference.

17 Q. Dr. Longo, what are we looking at here in terms
18 of does it satisfy Step 1 of the generally recognized
19 TEM method?

20 A. This is an anthophyllite solid solution series
21 asbestos structure. If we go through the morphology
22 requirement, this structure is 35.4 micrometers long.
23 Most likely longer, but this is the edge of the grid
24 bar. So you can't see if it is laying on top. It has
25 a width of 1.8 micrometers. So the aspect ratio would

1 be greater than 5-to-1, and it has substantially
2 parallel sides. So it meets the definition of the
3 morphology for a regulated asbestos fiber, if we go
4 and do steps 2 and 3. But it has a morphology for a
5 potentially regulated asbestos fiber.

6 Q. And you actually calculated the aspect ratio,
7 and it is 19.7-to-1?

8 A. Correct.

9 Q. These are in the book for the Court at tab 9 A,
10 and we'll skip past the next two.

11 Do all of the asbestos structures that you
12 identified in Johnson & Johnson's talc meet the
13 morphology requirement of the 5-to-1 aspect ratio and
14 the other requirements we have talked about today?

15 A. Five-to-one aspect ratio or greater.

16 Q. Good. If we go to your test book, and we put an
17 excerpt at tab 9 A for the Court, do we see count
18 sheets for all of the work of your lab?

19 A. Yes.

20 Q. Let me stop here. This says the analyst is
21 Anthony Keaton who did the TEM analysis. Can you tell
22 the Court what training your analysts undergo before
23 they can perform TEM or PLM analyses at MAS and their
24 experience levels?

25 A. All our PLM analysts at one point in their

1 careers went to Chicago and studied at the McCrone
2 Institute to learn to do polarized light microscopy.
3 They come back from that training course and start off
4 slowly, simple samples, samples -- someone coming
5 behind them who's more experienced until they build
6 up, until you can feel comfortable with them, that
7 they are routinely doing the analysis correctly.

8 Our two primary PLM analysts right now have
9 almost 30 years of experience each. Combined,
10 60 years of experience. They still go through updates
11 and QC.

12 For TEM analysis we typically may send them to
13 a course in McCrone or MVA, if they are brand new; and
14 then it is almost a six-month period before they are
15 actually allowed to do samples on their own without
16 routinely coming right behind them.

17 THE COURT: What's the general education when
18 they come to you and get this training?

19 THE WITNESS: Generally they have a Bachelor's
20 degree in either biological science. Anthony Keaton
21 happens to be a geologist and mineralogist. Our PLM
22 analysts are geologists. So you don't have to have a
23 higher education, but they do; but they have to be
24 able to understand the physics of it. Usually this
25 takes a four-year degree in some sort of science so

1 they can understand what they are doing.

2 Q. Do you closely supervise the work of your
3 analysts including --

4 THE COURT: You asked about him personally or
5 people in his lab do it?

6 Q. How do you and/or others in your lab supervise
7 your analysts and particularly to the point where your
8 name goes on a test book that we have marked as
9 Exhibit 2 showing all the testing done?

10 A. We have management levels. We have the manager
11 of the PLM and the TEM who has 15 years of experience.
12 And what I do is come in and check and look at and
13 review in QC to tell what protocols you use. I don't
14 do the analysis on a daily basis but I will come in
15 and say: "Can I look at that? Let me see. Show me
16 that's really this." That's sort of my job now.

17 Q. We've talked about the morphology requirements,
18 Step 1. Can the Court see on the count sheets that
19 you then have to also do steps 2 and 3. You have SAED
20 and EDS. Before you could say it's asbestos you have
21 to do the steps. Right?

22 A. Yes, sir.

23 Q. Let's take a look at Step 2.

24 Step 2 you described generally earlier but is
25 this an example of a generally-accepted method EPA

1 AHERA requiring the analysis that allows you to
2 determine the chemistry of the mineral that's being
3 looked at?

4 A. That is correct.

5 Q. If we go to the next slide, on one side we have
6 -- is this called an EDXA spectrum?

7 A. Yes, EDXA spectra or spectrum. Typically it's
8 spectra.

9 Q. Does looking at the spectrum show you the ratios
10 and levels of different elements that are shown in the
11 mineral?

12 A. Yes, it does that.

13 Q. Looking at the EPA AHERA requirement, it says
14 here, "Compare spectrum profiles with profiles
15 obtained from asbestos standards. The closest match
16 identifies and categorizes the structure."

17 Is that what Material Analytical Services did
18 in this case in testing Johnson & Johnson's talc?

19 A. Yes. These profiles would be for anthophyllite,
20 typically the magnesium and silicon peak here. And
21 then you will have iron, depending on the chemistry of
22 the mine the anthophyllite is in. The more iron tends
23 to have higher iron in the anthophyllite.

24 Then we take this and compare it to the
25 standards.

1 Q. One of the arguments Johnson & Johnson has made
2 in this case is that MAS should have included the
3 numerical values of each element below the EDXA
4 spectrum. Is that something required in the AHERA
5 method?

6 A. It is not. It is a visual comparison to the
7 asbestos standards.

8 Q. Is that what MAS does?

9 A. Yes.

10 Q. Does MAS follow the AHERA method that's stated
11 there?

12 A. Yes, we do.

13 Q. Looking more at AHERA at tab 21, page 896, for
14 the Court it talks again about the EDXA spectra, and
15 it talks about a semiquantitative comparison with
16 these reference spectra. Is that what MAS does?

17 A. Yes. It is a visual comparison of these unique
18 spectras in which you use a Step 2 on the way to
19 identify it as either asbestos or not asbestos.

20 Q. In terms of the word semiquantitative comparison
21 with the EDXA spectra of the mineral that's identified
22 in Johnson & Johnson's talc versus the spectra of an
23 asbestos standard that MAS has in its lab, how is that
24 semiquantitative? Is there a semiquantitative? Do
25 you agree with that characterization?

1 A. It is. You are visually looking at the ratio of
2 two elements for anthophyllite magnesium and silicon.
3 It is about a 5-to-10 ratio. It can be a little
4 higher or a little lower. That's what the standards
5 show. You are only required to do a visual
6 assessment.

7 Q. Now, in ASTM 5755, the method you talked about
8 and gained the consensus of all those scientists, what
9 does that say about what you need to have in terms of
10 that EDXA spectra?

11 A. It says to "record at least one X-ray spectrum
12 EDXA for each type of asbestos observed per sample.
13 Attach the printouts at the back of the count sheet."

14 Q. I'm holding Exhibit 2 MAS's test notebook and
15 I'm turning, for the record, to Longo MDL 00878. Is
16 that exactly what MAS did, attach the X-ray spectrum
17 to the back of the count sheet when MAS analyzed
18 Johnson & Johnson's talc for asbestos?

19 A. Yes, we did.

20 Q. And does ASTM 5755 or EPA AHERA say you should
21 even give the numerical quantification of each
22 element?

23 A. No.

24 Q. So when defense counsel cross-examines you on
25 why this area below is blank, which could have the

1 quantitative results for the anthophyllite, what's
2 your response?

3 A. It's not required in these TEM analysis. The
4 EPA AHERA analysis, it's not required.

5 Q. And the ASTM?

6 A. It is not required for the ASTM and the ISO
7 method.

8 Q. In terms of your last statement, it is not
9 required or specified in the ISO method, we are
10 looking here at 22262-1. Correct?

11 A. Yes.

12 Q. And those procedures are incorporated in 22262,
13 which is specified for testing talc for asbestos. Is
14 that correct?

15 A. That is correct.

16 Q. And here it says for anthophyllite, this is the
17 example we are looking at, classify a fiber as
18 anthophyllite if -- and it talks about magnesium and
19 silica peaks are comparable in ratio to those of
20 reference anthophyllite, and in ISO does it talk about
21 setting forth the numerical values or looking at the
22 peaks and looking at whether the ratios of different
23 elements are comparable?

24 A. It is a visual comparison to the standards.

25 Q. Now, let's go to Step 3 in this example we are

1 looking at. We have what EPA AHERA says about -- I'll
2 withdraw the question.

3 Does the EPA AHERA method require SAED as Step
4 3?

5 A. Yes.

6 Q. We're looking at tab 21. Does EPA AHERA say how
7 you are supposed to do Step 3 of the TEM analysis?

8 A. After acquiring the -- I'll stick with SAED
9 pattern, you form a visual examination to determine it
10 belongs to one of the following classifications. Your
11 visual examination, you say it belongs to chrysotile,
12 which is serpentine; amphibole, what we are dealing
13 with amphibole, the asbestos amphibole, and non
14 asbestos, by visually examination of the patterns
15 because of their uniqueness.

16 Q. And on cross-examination I'm sure Johnson &
17 Johnson is going to ask you why didn't you do zone
18 access, something called zone axis, and is that
19 required by the EPA AHERA method?

20 A. In some cases, some of the analysts did perform
21 zone axis. Our mineralogists will tend to do it from
22 time to time, but it is not required. It is not a
23 required step in the EPA AHERA method other than a
24 typical what we'll call a d-spacing diffraction
25 pattern that allows you to say this is an amphibole.

1 Q. And did MAS follow the EPA AHERA method in the
2 way it performed the SAED Step 3 of the TEM analysis
3 in testing Johnson & Johnson's talc for asbestos?

4 A. Yes.

5 Q. If we look further at EPA AHERA on page 899 of
6 tab 21, does the method say that what a lab is
7 supposed to do, "verify identification of the pattern
8 by measurement or comparison of the pattern with
9 patterns collected from standards under the same
10 conditions"?

11 A. Yes.

12 Q. Did MAS follow that protocol?

13 A. Yes, they did.

14 Q. And in terms of ISO 22262-1, do they speak to
15 how to distinguish anthophyllite asbestos from talc?

16 A. From fibrous talc.

17 Q. Why is it important to do this SAED analysis to
18 make sure you properly distinguish between fibrous
19 talc and anthophyllite asbestos?

20 A. Because the EDXA pattern or the chemistry for
21 anthophyllite can be identical to the chemistry for
22 fibrous talc. So you have to do a third step. The
23 third step distinguishes between the fibrous talc and
24 anthophyllite asbestos.

25 Q. The ISO standard says here anthophyllite

1 asbestos, and I'm pointing to it, the middle of the
2 page, on the other hand, produces assorted spots
3 appearing and disappearing along layer lines as the
4 fiber is tilted using the goniometer, do you see that?

5 A. Yes, sir.

6 Q. What is a goniometer?

7 A. It is the ability to tilt your specimen in the
8 TEM. You can rotate it and go from zero to some
9 angle.

10 Q. Does the ISO test method say here use zone axis?

11 A. No.

12 Q. Does it say use dual zone axis?

13 A. No.

14 Q. Does MAS follow the ISO standard as one of the
15 means of distinguishing anthophyllite asbestos from
16 fibrous talc?

17 A. Yes, we did.

18 Q. Let's keep these words in mind:

19 "Anthophyllite asbestos produces assorted
20 spots appearing and disappearing along layer lines as
21 the fiber is tilted using the goniometer."

22 If we go to the next slide, is this Step 3 one
23 of the examples that we have been looking at in terms
24 of anthophyllite asbestos in Johnson & Johnson's talc?

25 A. Yes. These are two different angle diffraction

1 patterns of the same anthophyllite structure. We're
2 calling it anthophyllite asbestos because we have gone
3 through steps 1, 2 and 3.

4 On the left-hand side we have the row of
5 patterns, and what you are looking at there from the
6 dots -- going in this direction, these are the scatter
7 or diffraction of the electrons for the rows of atoms
8 that go and scatters between the atoms. It is called
9 diffraction from here to here. From here to here
10 would be the next layer of crystal. This is at zero
11 tilt. When the goniometer is tilted, you see that
12 one, this layer of spots is now missing and now has
13 appeared up here. This layer has become smaller,
14 these spots, and we have an additional layer. What we
15 are doing, we just changed the electron beam direction
16 on this particular area of the crystal.

17 Fibrous talc can't do that, and that's how you
18 make the distinction between the two.

19 Q. You just demonstrated the way in which MAS
20 distinguishes anthophyllite asbestos from fibrous talc
21 in analyzing Johnson & Johnson's talc?

22 A. Correct.

23 Q. Now, in terms of ASTM 5755, does it say what you
24 are supposed to do is record a typical electron
25 diffraction pattern and attach it to the back of a

1 count sheet?

2 A. Yes, sir.

3 Q. If we go to your book PSC Longo 2, and I go to
4 page 879 Longo MDL, and Longo MDL 880, is that exactly
5 what MAS did, did they follow the ASTM 5755 protocol
6 on that as well?

7 A. Yes.

8 Q. You mentioned "fibrous talc." If we look at the
9 ISO method, it talks about anthophyllite asbestos and
10 talc having similar chemistry by EDXA, but then it
11 says:

12 "ED, electron diffraction of talc produces a
13 pseudo hexagonal pattern that does not change as the
14 fiber is tilted using the goniometer."

15 Is that what it says?

16 A. Yes.

17 Q. What is being shown in this slide, and can you
18 compare it with what ISO is saying about how you
19 distinguish fibrous talc from anthophyllite asbestos?

20 A. Here is the fibrous talc structure. It meets
21 the definition of asbestos. It has all the right
22 geometry. Greater than or equal to 5-micrometers -- I
23 mean greater than or equal to 5-to-1 aspect ratio,
24 longer than .5 micrometers particle size; and when you
25 do the selected area electron diffraction, when they

1 say pseudo hexagonal, you can see the hexagonal
2 pattern. If you tilt the goniometer, that pattern
3 doesn't change.

4 Q. Is that pseudo hexagonal pattern, which is
5 characteristic of fibrous talcs circled in red on the
6 slide?

7 A. Yes, sir. Finishing this third step as per the
8 ISO protocol, you can now call what we are looking at
9 a regulated asbestos structure of the anthophyllite
10 solid solution series.

11 Q. Now, going back to this issue of zone access
12 SAED. ISO says here in 22262-1, analysis of
13 laboratory samples seldom requires zone axis
14 measurements.

15 Do you see that?

16 A. Yes, sir.

17 Q. Is there anything in this ISO standard that says
18 specifically that you should use zone axis or dual
19 zone axis for testing talc for asbestos?

20 A. No.

21 Q. And it says here:

22 "Seldom the laboratory samples in general
23 seldom requires zone axis measurements."

24 What is your understanding of that based upon
25 your expertise and experience?

1 A. That for the types of asbestos we are looking
2 at, beside the anthophyllite, which you should tilt
3 for the two diffraction patterns, either the tremolite
4 series or the anthophyllite series, is fairly
5 straightforward, you are not dealing with unknowns.

6 Q. Do the three steps that you have outlined in the
7 ISO method, in the EPA AHERA method, in the ASTM 5755
8 method, and following those three steps in the method
9 allow you to have reliably identified asbestos in
10 Johnson & Johnson's talc?

11 A. Yes, sir, it has.

12 Q. Looking at -- does Johnson & Johnson have its
13 own TEM method for testing asbestos in talc?

14 A. Yes, they call it the T.M. 7024.

15 Q. If we look at Johnson & Johnson's TEM method
16 that they use for testing talc for asbestos, did they
17 require any zone axis SAED?

18 A. No. They say measurement of amphibole SAED
19 patterns. You are measuring the D spacing, which we
20 do.

21 Q. If we go down to section 13.5 of Johnson &
22 Johnson's own TEM method that they use outside of
23 court, it says:

24 "If it is consistent -- if the SAED pattern is
25 consistent with an amphibole SAED pattern, then it is

1 examined by EDXRA to confirm the identification or to
2 identify the type of amphibole."

3 Do you see that?

4 A. Yes.

5 Q. Is that consistent with what MAS did in order to
6 identify amphibole asbestos in Johnson & Johnson's
7 talc?

8 A. It is.

9 Q. And it says here this is Johnson & Johnson's
10 test for asbestiform minerals. Do you see that?

11 A. Yes, sir.

12 Q. Are asbestiform minerals of the tremolite type,
13 anthophyllite type, and actinolite type asbestos?

14 A. Yes, it is.

15 Q. If we put all the steps together, the
16 morphology, the EDXA and the SAED, are your findings
17 of anthophyllite asbestos in Johnson & Johnson's talc
18 set forth in your report and the testing notebook
19 which is Exhibit 2?

20 A. Yes, sir.

21 Q. Let's talk about another sample tremolite
22 asbestos. Did you find another type of asbestos
23 called tremolite asbestos by TEM in some of the
24 Johnson & Johnson's talc products?

25 A. Yes.

1 Q. Was the morphology requirement meant for all
2 that asbestos you found of the tremolite type in
3 Johnson & Johnson's talc?

4 A. It was.

5 Q. Could we see the imagery that shows that?

6 A. Yes. This would be a step down structure as
7 described in the ISO method. I just wanted to show
8 what one would look like.

9 Q. It looks like there are three different fibers,
10 three different structures that are poking out of the
11 top of that. What is that?

12 A. Essentially, we have a bundle there that has
13 different amounts of individual fibers in it. That's
14 a tremolite asbestos structure.

15 Q. And in terms of the documentation of all this
16 testing, does it show where the asbestos structure was
17 found in the TEM grid, for example, in A-2, that it
18 was found in A-2?

19 A. Yes. That gives you a road map, if you want to
20 go back and have somebody say, I would like to go look
21 at that asbestos fiber you saw. You can easily go to
22 the grid box, and it will tell you what square inside
23 the sample holder that you found that structure.

24 Q. And, quickly, how small are these TEM grids and
25 how much talc is typically tested in a TEM analysis?

1 A. You can see a little scale up there. The
2 overall dimension of the TEM grid is 3 millimeters in
3 diameter. Inside that TEM grid you have what looks
4 like a miniature screen with the holes. That has been
5 edged. Each one of those grid openings is 100
6 micrometers by 100 micrometers. The amount of
7 material that goes onto a grid on the filter in this
8 case is 21 milligrams of sample that is distributed
9 throughout. So the amount on an individual grid
10 opening is very small.

11 Q. And did you follow all the steps that we talked
12 about earlier, the three steps of the
13 generally-accepted TEM methods in identifying
14 tremolite asbestos in Johnson & Johnson's talc
15 products?

16 A. Yes. In this case we have an element, calcium,
17 that distinguishes it as tremolite chemistry based on
18 the ratios of the magnesium, silicon and calcium.

19 Q. In terms of not having the quantity of each
20 element below the EDXA spectra, I want to ask you
21 about testing done by OSHA in February of 2019, and
22 how did OSHA determine there was tremolite asbestos in
23 a talc product on the market called Claires?

24 A. They used morphology in EDXA only to not perform
25 SAED, and this would be OSHA's analysis they supplied

1 to the FDA.

2 Q. In terms of how OSHA did it, it says they have
3 the EDXA spectrum for tremolite asbestos, and do they
4 set forth the quantification of the elements
5 characterizing tremolite as Johnson & Johnson is
6 arguing you should have done?

7 A. No, they didn't perform that. Nor did they
8 perform SAED.

9 Q. In terms of following all three steps, the TEM
10 analysis to find tremolite asbestos in Johnson &
11 Johnson's talc, did you do that?

12 A. Yes.

13 Q. Now, I want to pause here for a moment. Johnson
14 & Johnson in their cross-examination might say:
15 Dr. Longo, what you are identifying is non-asbestos.
16 Does EPA AHERA have a rule and a standard for what
17 non-asbestos is?

18 A. Yes, it does. It doesn't meet one of these
19 criteria, the morphology, the EDXA, the chemistry or
20 the electron diffraction pattern.

21 Q. So if it doesn't meet one of those three steps
22 that we have been through, set forth in EPA AHERA, is
23 it non-asbestos if it doesn't meet one of the three
24 steps?

25 A. You have to call it non-asbestos. You can't

1 have an asbestos structure that is too thick for the
2 electron beam to go through and you don't get the
3 diffraction pattern because the electron beam has to
4 be able to penetrate through the fiber to cause the
5 diffraction or scattering. What EPA says if you don't
6 get an ED pattern, you don't count it as asbestos.

7 Q. Let's say you have a particle of tremolite that
8 you could identify as tremolite based on the
9 chemistry, the EDXA. You can identify it as tremolite
10 based on the crystalline structure. But let's say the
11 aspect ratio is only 4-to-1 or 3-to-1. Under the EPA
12 AHERA, would that be non-asbestos because it doesn't
13 meet the morphology ratio?

14 A. I would not count that as asbestos.

15 Q. Would you refer to that as a tremolite cleavage
16 fragment?

17 A. We may but we will not put it in the count sheet
18 as regulated asbestos.

19 Q. So EPA AHERA says what's non-asbestos, and is it
20 your opinion to a reasonable degree of scientific
21 certainty, based upon the generally-accepted methods
22 that MAS followed, that all of the asbestos identified
23 by MAS in Johnson & Johnson's talc satisfied all three
24 steps of EPA AHERA method and the other
25 generally-accepted test protocols that we discussed?

1 A. Yes.

2 Q. Would any of the anthophyllite asbestos or
3 tremolite asbestos or actinolite asbestos that you
4 found in Johnson & Johnson's talc qualify as
5 non-asbestos under the EPA AHERA standard?

6 A. No.

7 Q. We talked about these methods. Let me ask you
8 quickly about Johnson & Johnson's own method.

9 Does Johnson & Johnson's own TEM method
10 specify the same three steps for TEM that you have
11 discussed with the Court?

12 A. Yes.

13 Q. Did you in fact follow a more restrictive
14 standard?

15 A. Yes, we did.

16 Q. In terms of the morphology whereas Johnson &
17 Johnson in their TEM method outside of court says you
18 can count as asbestos if it is greater than 3-to-1,
19 and did MAS apply a more restrictive standard?

20 A. Yes. The counting criteria we use from EPA and
21 others is greater than or equal to 5-to-1.

22 Q. Johnson & Johnson may say, Dr. Longo, there are
23 some samples where you only found one asbestos
24 structure. Have you been asked about that?

25 A. A number of times.

1 Q. And in Johnson & Johnson's own method, does it
2 say that this three-step TEM method is capable of
3 detecting a single fiber in the standard?

4 A. Yes, it does.

5 Q. In fact, the ISO method that is specified for
6 testing talc for asbestos, does that state that a
7 finding of one fiber of asbestos or one fiber bundle
8 of asbestos is sufficient to determine the sample
9 contains asbestos?

10 A. Yes.

11 Q. Do we see that there on page 7 of ISO 22262-2?

12 A. Yes, it says it is the limit of quantification
13 which is either one fiber or one bundle.

14 Q. Is that the generally-accepted scientific
15 standard?

16 A. It is the generally-accepted scientific standard
17 for these types of analysis where you have process
18 blanks and you can understand that you do not have
19 background or cross-contamination in the laboratory.

20 Q. Does MAS employ those scientific protocols to
21 assure that the asbestos found in Johnson & Johnson's
22 talc came from the talc and not from contamination?

23 A. Yes, it does.

24 Q. Dr. Longo, are there types of asbestos that were
25 used in general commerce where a company would buy

1 bags of commercial asbestos and incorporate it into
2 the products?

3 A. Yes.

4 Q. Was chrysotile the most common form of
5 commercial asbestos used historically in the United
6 States?

7 A. Yes. 95 percent of all asbestos products
8 contain chrysotile.

9 Q. Were there two commercial grade forms of
10 amphibole asbestos used in the United States called
11 amosite and crocidolite?

12 A. Yes. That made up the remaining 5 percent.
13 Amosite was 4.6 percent used in this country and
14 crocidolite was .4 percent.

15 Q. And the forms of asbestos that you found in
16 Johnson & Johnson's talc, anthophyllite asbestos,
17 tremolite asbestos, and actinolite asbestos, are those
18 commercial forms of amphibole asbestos or
19 noncommercial forms of amphibole asbestos?

20 A. They are noncommercial forms. Tremolite and
21 actinolite, I'm not aware of them using it in a
22 product; and anthophyllite mined in Finland, was used
23 in one specialty product that was a plastic pipe for
24 high pressure chemical processes that you need really
25 good acid resistance, but that's it.

1 Q. Is there some general definitions of asbestos
2 that are found in certain test methods including ASTM
3 5755 that we discussed that talk about asbestos or
4 asbestiform, meaning or having part of the definition
5 being high tensile strength and flexibility of the
6 mineral?

7 A. Correct.

8 Q. As to anthophyllite asbestos, tremolite asbestos
9 and actinolite asbestos, do those types of asbestos
10 have high tensile strength and flexibility?

11 A. No. They are almost classified as brittle.
12 They don't have flexibility. Therefore, you cannot
13 weave them. It is not a commercial type of asbestos.
14 Those definitions that are in every TEM method, PLM
15 method is a general definition for asbestos-added
16 products. It is not intended for all asbestos. The
17 main reason we know that -- I put the definition in
18 ours in the negotiation -- is there is no test for it
19 at the microscopic level. Therefore, it has to be a
20 general definition.

21 Q. So in terms of a test method, even though a
22 definition might say high tensile strength and
23 flexibility, is there any way of even testing that
24 with a microscopic asbestos structure?

25 A. No, it is impossible. You have to understand

1 they don't even define high tensile strength.

2 Q. If those were requirements, if it had to have
3 high tensile strength and flexibility in order to be
4 asbestos, even though there are no test methods for
5 that, would that essentially exclude known types of
6 asbestos, including anthophyllite asbestos, tremolite
7 asbestos, and actinolite asbestos that weren't used
8 for commercial purposes because they don't have those
9 attributes?

10 A. It would. There are test methods for tensile
11 strength, but the only way you can do that is go to
12 the mine and cut a very big piece of the asbestos
13 bundle, tape it to paper, and put it in what's known
14 as an Instron to test tensile strength.

15 Q. But is it part of generally-accepted TEM and PLM
16 methods?

17 A. No, it is impossible using those analyses, using
18 those two analytical tools.

19 Q. Let me go through this next section quickly.
20 I'm really trying to move along.

21 THE COURT: Just so you know, you will end at
22 noon. We talked about 2 1/2 hours. I know we took a
23 break. It will still give you more than 2 1/2 hours.
24 Look at the clock. You have 20 minutes.

25 MR. BLOCK: Thank you, your Honor.

1 Q. Under the established generally-accepted TEM
2 methods, if it is a fiber, a bundle, a cluster or
3 matrices, as long as the three steps of the TEM are
4 met, is it asbestos?

5 A. Yes.

6 Q. Okay. There has been discussions in the
7 briefing about identifying something as a fiber versus
8 a bundle. Under the standard TEM methods, including
9 EPA AHERA, are they both asbestos?

10 A. They are. One is not more asbestos than the
11 other. It is all regulated asbestos if it is a fiber
12 bundle or what have you.

13 Q. Is the same true under the other
14 generally-accepted methods including ASTM 5755, as we
15 can see on the screen right here?

16 A. Yes.

17 Q. They are asbestos structures if the test method
18 is met regardless of whether it is called a fiber or a
19 bundle or a cluster or a matrices. Is that correct?

20 A. That is correct.

21 Q. Johnson & Johnson has raised this co-efficient
22 of variation test which is attached to the Court's tab
23 52. I want you to briefly -- what did this show about
24 the ability of TEM analysts at MAS to accurately
25 identify the total structures of asbestos contained in

1 a talc sample?

2 A. This test was designed to measure the error rate
3 of the four TEM analysts counting and looking at the
4 same grid openings and determining how many asbestos
5 structures that they are seeing and identifying
6 compared to the next analyst and the next analyst and
7 the next analyst, and this all was done blind.

8 Q. What were the results of the comparison and
9 those analysts being able to identify the total
10 structures?

11 A. That the co-efficient of variation for the four
12 analysts showed there was an error rate of plus or
13 minus 6 percent.

14 Q. To reverse that, it was over 90 percent, what
15 would you say consistency?

16 A. Yes.

17 Q. Now, Johnson & Johnson put this chart in their
18 brief, and it depicts that in this test the four
19 analysts unanimously agreed on whether something was a
20 fiber or a bundle on only one occasion. Do you see
21 that?

22 A. Yes. Just for the tremolite, not for the
23 anthophyllite.

24 Q. Going to the next slide, did you calculate the
25 percentage of agreement among the analysts in

1 determining whether something was a fiber or a bundle?
2 A. Yes. They had a 72 percent agreement. The way
3 this is measured is not -- does everybody get it right
4 because there is no right. This is the analyst
5 looking at an unknown structure in making the decision
6 if it is a fiber or a bundle.

7 So if three analysts say it is a bundle and
8 one says it is a fiber, there is a 75 percent
9 agreement. It would be the same -- and I know this
10 didn't happen, but you have to think about suppose 100
11 TEM analysts looked at a structure and 95 of them said
12 it was a bundle, and five said it was only a fiber,
13 that doesn't make that 95 wrong. They would say
14 that's 95 percent agreement. That's how this is
15 evaluated for reproducibility.

16 Q. So there was 72.2 percent agreement on whether
17 the tremolite asbestos structure was a fiber versus a
18 bundle. Is that what it shows here?

19 A. Yes.

20 Q. And if we go to anthophyllite, Johnson & Johnson
21 did not put a chart on their brief about anthophyllite
22 asbestos, comparing identification of fibers versus
23 bundles; and does that show an 83.7 percent agreement?

24 A. 83.7 agreement if the structures are either a
25 bundle or a fiber.

1 Q. Did a laboratory called J-3 Resources conduct a
2 study to see if it could verify the presence of
3 asbestos structures detected in certain J&J talc
4 samples tested in the MDL?

5 A. Yes.

6 Q. And if we go to this slide here, is this a
7 summary of the analysis of J-3 as compared looking at
8 MAS' samples?

9 A. Yes. J-3 took our TEM grid and went and
10 reanalyzed the asbestos structures that we had already
11 analyzed and said was asbestos and verified what his
12 findings were independently of our finding for the
13 exact same asbestos structures.

14 Q. It says here J-3 verified the asbestos. 20 out
15 of the 22 asbestos structures identified by MAS, and
16 that's 91 percent. Correct?

17 A. Yes.

18 Q. And the two disagreements were that J-3
19 concluded that two of them did not have sufficiently
20 particle sides. Right?

21 A. That was his opinion.

22 Q. And did the J-3 lab follow the same three step
23 TEM method?

24 A. Yes.

25 Q. It says out of the 20 agreed-upon asbestos

1 structures, there was a high level of agreement
2 between MAS and J-3 about whether the asbestos
3 structure was a fiber or a bundle. Is that correct?

4 A. Correct.

5 Q. Just to be clear, if it is -- I'll withdraw the
6 question.

7 Under the three-step TEM that's
8 generally-accepted, does it make a difference whether
9 it is a fiber or bundle in terms of whether it is
10 asbestos?

11 A. It does not.

12 Q. Did J-3 Resources conduct their own testing of
13 some Johnson & Johnson talc powder Shower To Shower
14 samples?

15 A. Yes, MDL samples.

16 Q. Did they also apply ISO 22262, the protocol you
17 described to the Court today?

18 A. Yes.

19 Q. Did they find anthophyllite asbestos in 11 out
20 of the 16 samples?

21 A. Yes, they did.

22 Q. Did MAS conduct a test to see if it could verify
23 the presence of asbestos in those 11 samples that this
24 separate lab J-3 Resources found anthophyllite
25 asbestos in?

1 A. Yes. We verified their analysis.

2 Q. MAS found nine out of 11 samples where J-3 found
3 anthophyllite asbestos in fact did contain
4 anthophyllite asbestos. Is that correct?

5 A. Yes.

6 Q. What about the other two?

7 A. One, the grid was damaged. So we could not --
8 the asbestos structure was gone. These carbon films
9 on these grids are very sensitive to movement.

10 The second one we couldn't locate the asbestos
11 structure on the grid opening.

12 Q. In terms of the TEM test results at MAS, did MAS
13 detect amphibole asbestos in 42 of the 71 Johnson &
14 Johnson talc samples?

15 A. By transmission electron microscopy.

16 Q. Using the heavy liquid separation prep method?

17 A. Yes.

18 Q. What about the samples where amphibole asbestos
19 was not detected; can you assure us there is no
20 asbestos in the containers or what do the results tell
21 us?

22 A. The results say nondetect. We can't say it is
23 there. We can't say it is not there. If it happens
24 to be there, it would be below our analytical
25 sensitivity.

1 Q. Which is what?

2 A. The approximately 8 to 9,000 fibers/bundles per
3 gram asbestos structures per gram of talc.

4 Q. Did MAS conduct an analysis using
5 generally-accepted methodologies to calculate the
6 structures, the number of structures of asbestos
7 contained per gram of the Johnson & Johnson's talc in
8 which it found asbestos?

9 A. Yes.

10 Q. Is this an example where MAS found seven
11 structures of asbestos, looked at the amount that was
12 analyzed, and is this a standard calculation where you
13 then state what it is per gram?

14 A. Per gram per cubic centimeter of air, per
15 centimeter squared of surface area, per the number of
16 fibers or bundles in a lung burden analysis. It is
17 all the same type of math. They all do the same.

18 Q. Let's talk about the polarized light microscopy
19 analysis that MAS did. This is the smaller microscope
20 we looked at earlier. Correct?

21 A. Correct.

22 Q. It talks about MAS using a 1.605 refractive
23 index fluid. Is that what ISO says to use?

24 A. For suspected tremolite or anthophyllite.

25 Q. If we look at an example, this 1978 Johnson's

1 Baby Powder sample, do we see here an MAS data sheet
2 next to the ISO standard?

3 A. Correct.

4 Q. Did MAS look at the morphology and all the other
5 characteristics signs of elongation, extinction
6 characteristics; did they follow ISO in determining
7 whether there was amphibole asbestos in Johnson &
8 Johnson's talc?

9 A. Yes.

10 Q. Is that shown by comparing the ISO standard to
11 MAS' data sheets?

12 A. We followed how you identify it in polarized
13 light microscopy as stated by ISO.

14 Q. In terms of how you determine under polarized
15 light microscopy, whether what you are seeing is
16 asbestos, does ISO give guidelines on that?

17 A. Yes, sir.

18 Q. And if you could, just explain how you can state
19 reliably to this Court based upon generally-accepted
20 methods that the amphibole asbestos that you found in
21 Johnson & Johnson's talc by polarized light microscopy
22 is asbestos?

23 A. We identified it using the criteria on ISO for
24 the crystalline structure and how you identify it.
25 Then we go to, is it asbestos? Does it meet the

1 counting rules? In this case the individual fibers in
2 the bundles have to be in the range of 20-to-1 or
3 greater.

4 In the TEM method, the bundles are measured --
5 you don't try to measure the individual fibers. You
6 can't. It is not allowed in the method because nobody
7 can agree on it. Here you can see the individual
8 fibers. You don't have to count them, but you give a
9 length-to-width aspect ratio.

10 Then it says any of the following parallel
11 fibers occurring in bundles. These are bundles that
12 we are seeing, and you can see in the example we will
13 have parallel fibers.

14 So it meets the criteria for asbestos in the
15 ISO method.

16 Q. I just want to make clear. The notion of
17 looking at whether it is a bundle is something that's
18 part of the PLM analysis. Is that correct?

19 A. Yes.

20 Q. Does the PLM analysis also say it can be fibers
21 in the form of thin needles? Does it have to be a
22 bundle?

23 A. No.

24 Q. Looking at the next page, does ISO state that
25 amphibole asbestos is probably present under polarized

1 light microscopy, if any amphibole fibers longer than
2 5 microns with aspect ratios of 20-to-1 or higher are
3 identified?

4 A. Yes, it does.

5 Q. Did you identify by polarized microscopy
6 amphibole asbestos fibers meeting that standard in the
7 Johnson & Johnson talc products that you identified as
8 having asbestos by polarized light microscopy?

9 A. Yes, we did.

10 Q. We don't have much time but we have Exhibits 3 A
11 and 3 J, your Honor.

12 Dr. Longo, the Court has these. Let's go to
13 the last two. I'm first putting up 3 I, and --

14 A. You have to focus it.

15 Q. Dr. Longo, what are we looking at here?

16 A. We're looking at what we call an actinolite
17 tremolite asbestos bundle. This is under dispersion
18 staining, which gives you the ability to, one,
19 determine the refractive indices, which is part of the
20 test, and, two, it allows us to look at the structure.
21 This optical micrograph shows that this structure is
22 54 microns in length which meets the criteria greater
23 than 5 microns.

24 Also, you can see that there are individual
25 fibers inside this bundle; and at the resolution here,

1 you can see the striations and you can see them
2 sticking out at the end. That's 54 micrometers, and
3 this is approximately 5 or so micrometers wide. So
4 just for argument sake, every one of those fibers are
5 a little bit less than 1 micrometer. So we have
6 aspect ratios here all greater than 54-to-1, which
7 gives you greater than 20-to-1. So it meets the
8 definition of asbestos by the ISO. In fact, they will
9 call it asbestiform.

10 Q. Did you provide these representative photographs
11 Exhibits 3 A to 3 J to the Court because they have
12 higher resolution and they allow the visualization of
13 bundles where you can visualize the individual fibers
14 that make up the bundle?

15 A. Yes.

16 Q. Let's go back to the PowerPoint please.

17 Dr. Longo, we're back to the PowerPoint, and
18 we're looking at this example.

19 Are we looking at amphibole asbestos that MAS
20 identified by polarized light microscopy in a Johnson
21 & Johnson talc sample that meets the
22 generally-accepted standards of what is asbestos under
23 that method?

24 A. Yes. This is anthophyllite. It met all the
25 criteria for the crystalline structure. This

1 particular one is 163 micrometers long. There is
2 individual fibers inside that bundle.

3 Q. That is one of the high resolution pictures you
4 provided to the Court?

5 A. Yes.

6 Q. Just going through.

7 This one says "elongation." Something that's
8 talked about in the ISO standard. In a few words, how
9 does this depict elongation?

10 A. This shows that it is blue in the northeast/
11 southwest orientation. So this would be elongation in
12 the fast direction.

13 Q. I think we saw the term "cross polars" in the
14 ISO generally-accepted method. Is that something we
15 see in polarized light microscopy generally-accepted
16 methods?

17 A. Yes.

18 Q. How does this picture go to the issue of cross
19 polars in identifying anthophyllite asbestos in
20 Johnson & Johnson's Baby Powder under PLM?

21 A. I can tell from the color because of the cross
22 polars. What cross polars does is to look for the
23 extinction angle. The extinction angle is when the
24 asbestos structure disappears at a certain angle. We
25 don't show that because it would be a black screen.

1 This is not the extinction angle.

2 For anthophyllite, if you put it perpendicular
3 or parallel, it would be extinction where no light
4 goes through.

5 Here is elongation again. So we are following
6 all that.

7 THE COURT: Let's sum up.

8 MR. BLOCK: Your Honor. Can I have a
9 two-minute extension?

10 THE COURT: Two minutes.

11 BY MR. BLOCK:

12 Q. Now, we are looking at another example of MAS
13 finding anthophyllite asbestos by polarized light
14 microscopy in Johnson & Johnson's talc products. See
15 that?

16 A. Yes.

17 Q. We just looked at this picture up on the screen.
18 Can you clearly visualize -- is that what an asbestos
19 bundle looks like under polarized light microscopy?

20 A. In these types of samples, yes.

21 Q. Why is that an asbestos bundle under tab 9 G?

22 A. Because it meets all the counting criteria
23 under ISO, the asbestos or asbestiform.

24 Q. Two more slides.

25 The first is looking at the results of the PLM

1 testing MAS did, and if it says 58 percent -- in
2 58 percent of the samples, amphibole asbestos was
3 detected by polarized light microscopy using the heavy
4 liquid separation method. Is that correct?

5 A. Yes.

6 Q. Did MAS also do polarized light microscopy
7 without the heavy liquid separation method?

8 A. Yes, we have 30 percent. So the heavy liquid
9 separation was more sensitive. It almost doubled the
10 positives.

11 Q. Is that consistent with the fact ISO does not
12 recommend doing polarized light microscopy without
13 doing heavy liquid separation?

14 A. No, they don't say that. They give you the
15 option to do either/or, but they tell you what's the
16 most sensitive.

17 Q. Finally, Dr. Longo, have you reviewed historical
18 documents from Johnson & Johnson's production where
19 the types of asbestos, the same types of asbestos you
20 found in Johnson & Johnson's talc products were found
21 in Johnson & Johnson's historical testing of both
22 source talc mines and in the products themselves?

23 MS. BROWN: Objection, your Honor, as to the
24 interpretation of these findings. It has nothing to
25 do with methodology. There are many documents related

1 to industrial talc --

2 THE COURT: I think it is an overbroad
3 question, so I think we are done unless you want to
4 rephrase it.

5 MR. BLOCK: May I?

6 THE COURT: Let me hear.

7 BY MR. BLOCK:

8 Q. Is it relevant and important to you as a
9 scientist to see if the results of your testing are
10 consistent with the historical testing done by Johnson
11 & Johnson and its consultants on its talc sources and
12 on its products?

13 MS. BROWN: The same objection, your Honor.
14 It remains just as broad. All of the testing ever
15 done number one he hasn't reviewed it; number two,
16 many there relates to products that are not at-issue
17 here.

18 THE COURT: I'm going to strike it.

19 Do you have anything else?

20 MR. BLOCK: I'll just narrow it down by
21 saying:

22 BY MR. BLOCK:

23 Q. Did you review the expert reports of Dr.
24 Krekeler and Dr. Cook issued in this case?

25 A. Yes, I did.

1 Q. What significance is there in terms of the
2 opinions they have expressed in this case to you in
3 evaluating the reliability of your testing?

4 A. They identified the same type of asbestos that
5 we are seeing in the Italy mine, the Vermont mine, and
6 compared that also to Johnson & Johnson's own test for
7 those particular mines for cosmetic talc. We are
8 consistent with they say that is in there because of
9 the geological formation as well as the literature as
10 well as the testing done by Johnson & Johnson.

11 MR. BLOCK: Thank you, your Honor, for giving
12 me a little extra time. I appreciate that.

13 THE COURT: We're going to break for lunch
14 now. It is a convenient time. Let's be back at a
15 quarter of 1:00, please.

16 THE DEPUTY CLERK: All rise.

17 (The luncheon recess is taken.)

18 (Continued on the next page.)

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A F T E R N O O N S E S S I O N

THE DEPUTY CLERK: All rise.

THE COURT: Thank you.

WILLIAM E. LONGO, resumes.

CROSS-EXAMINATION

BY MS. BROWN:

Q. Good afternoon, Dr. Longo.

A. Good afternoon.

Q. Dr. Longo, you have never personally tested a talc sample for asbestos from start to finish. Correct?

A. That's correct.

Q. And when it comes to the samples that you talked to us about this morning with counsel, you were not actually the person who looked under the microscope and ran those samples. Right, sir?

A. That is correct.

Q. What that means is you are also not the person who did the heavy density liquid preparation to get those samples ready to be looked at under at the microscope. Correct?

A. That is true.

1 Q. What that also means is you are not the person
2 who filled out some of the count sheets we saw up here
3 this morning. Correct?

4 A. That is correct.

5 Q. What that means is you are not the person who
6 made the call when we were looking under the
7 microscope about whether what they were seeing was a
8 bundle or a fiber. Right, Doctor?

9 A. That's correct.

10 Q. All of that work -- the sample preparation, the
11 looking under the microscope, the filling out of the
12 count sheets, the making the call of a bundle or fiber
13 -- all of that work was done by people who work for
14 you at the company you own. Is that right?

15 A. Yes, ma'am.

16 Q. And those individuals have never provided sworn
17 testimony under oath about the tests they conducted
18 here in the MDL. Correct?

19 A. I believe that's correct.

20 Q. And those folks are not coming into this court
21 to talk to us about their work looking at samples
22 under the microscope. Correct?

23 A. That is correct.

24 Q. You are here to talk about the findings of the
25 people that work for you at MAS. Correct?

1 A. That's correct.

2 Q. The truth is, Dr. Longo, that nowadays very
3 little to none of your time is actually spent at the
4 microscope testing products for the presence of
5 asbestos. Correct?

6 A. I don't do that too often.

7 Q. Nowadays, very little to none of your time is
8 spent doing that. Right?

9 A. As I said, I don't do that too often anymore.

10 Q. In fact, most of what you do these days is
11 testify in court. Correct?

12 A. No, ma'am. I also run the company. I also give
13 directions on what protocols to use. I'm in meetings
14 hiring and firing; and where the direction of the
15 science is going, what methods we are going to use for
16 different types of applications. So, yes, I testify
17 once to twice a week. I still have other jobs.

18 Q. When you say once or twice a week, Dr. Longo,
19 the truth of the matter is you have testified at least
20 once a week every week for the past five years. Fair?

21 A. That is fair.

22 Q. And since the time you opened your company MAS
23 in 1988, you have given about 2,000 to 3,000
24 depositions. Correct, sir?

25 A. I think that is correct.

1 Q. What you testified to before, Doctor, is that
2 working as an expert witness has actually been what
3 has allowed your lab to survive?

4 A. Yes. That and every other big client we have.
5 That's true.

6 Q. You told us this morning that the \$30 million
7 that MAS received from plaintiffs' lawyers didn't go
8 to you; it went to the company. Correct?

9 A. That's correct.

10 Q. And you, sir, own 75 percent of MAS. Correct?

11 A. That's correct.

12 Q. And you have declined to testify about how much
13 money you make at MAS. Correct?

14 A. That's true.

15 Q. And you have been testifying to that \$30 million
16 figure for a couple of years now. Right, Doctor?

17 A. I think it has been a year.

18 Q. What you testified to, Doctor, is that you think
19 that every plaintiff's attorney in the country lists
20 you as an expert in any type of asbestos litigation.
21 Isn't that right?

22 A. They did that at one time, yes, ma'am.

23 Q. Your testimony is they do that without even
24 asking you if it is okay. Right?

25 A. They did that for a while, yes.

1 Q. You testified in fact that -- you testify so
2 much as an expert witness that it is a juggling act to
3 try to make time for trials like this one and others.
4 Correct?

5 A. Yes, ma'am.

6 Q. You were in Kentucky yesterday testifying at a
7 trial there. Correct?

8 A. That is correct.

9 Q. And this morning you talked to us a little bit
10 -- counsel had a slide up there about corporations,
11 and you talked a little bit about work that you have
12 done for GE. Do you remember that?

13 A. Yes.

14 Q. The truth of the matter is that 95 percent of
15 the time you are in court, you are testifying for
16 plaintiffs' lawyers. Right?

17 A. That is correct.

18 Q. And the fact of the matter is, Dr. Longo, is
19 that your lab MAS has never tested cosmetic talc when
20 you weren't being paid to do it by lawyers for the
21 plaintiffs in litigation. Right?

22 A. That is correct.

23 Q. And you talked a lot about methodology this
24 morning with counsel. But the truth is that you don't
25 know anyone, Dr. Longo, who is not being paid as an

1 expert witness for the plaintiffs who is using the
2 methods that you used in this case to test cosmetic
3 talc. Isn't that right?

4 A. I think some part of it is right. The heavy
5 liquid density method portion. But the other standard
6 methodology where for morphology, EDXA and SAED is a
7 standard method that even when people aren't using
8 heavy liquid density separation, they are using those
9 three steps to identify regulated asbestos.

10 Q. True or not true, Dr. Longo: You don't know of
11 anyone else besides Mr. Lee Poye, expert for the
12 plaintiffs, and yourself, using the method you are
13 using in this case, to test cosmetic talc for
14 asbestos?

15 A. Again, part of that is correct. It's the heavy
16 liquid density portion. But anyone who has analyzed
17 cosmetic talc using the standard methodology for the
18 identification of asbestos would be doing the same
19 thing.

20 MS. BROWN: Permission to read, your Honor?

21 THE COURT: Yes.

22 MS. BROWN: This would be in the Court's and
23 counsel's testimony binder at tab Longo 560 from the
24 December 4, 2018, Blinkinshop deposition, page 93,
25 line 18, to 94, 2:

1 "QUESTION: Okay. But back to my original
2 statement. You and Lee Poye are the only people that
3 you know of in the world using the method you are
4 using in this case?

5 "ANSWER: I don't know in the world. I know
6 unless somebody -- somebody else may be using it. But
7 for me to say who else out there is using it, if you
8 want to know this, I don't know anybody else besides
9 Lee and I, since we're the ones that seem to be
10 testifying about it."

11 Dr. Longo, the only protocol recognized by the
12 FDA for the analysis of talc is the USP Monograph For
13 Talc. Correct?

14 A. At this time I think that is correct versus the
15 committee that are trying to upgrade it to be more
16 sensitive because of the problems with it, but I
17 believe you are right.

18 Q. The answer to my question is yes?

19 A. Yes. But not --

20 THE COURT: I understand your answer, but I
21 think you have answered her question.

22 Q. And you, Dr. Longo, did not use the USP
23 Monograph for Talc in evaluating the MDL samples.
24 Correct?

25 A. No, ma'am, we didn't.

1 Q. No government regulatory agency has adopted the
2 ISO method you use here. Correct?

3 A. That is correct.

4 Q. Before you were hired as an expert witness in
5 litigation, your lab had never used the ISO 22262
6 method for the analysis of asbestos in any product
7 whatsoever. Correct?

8 A. That is correct.

9 Q. No government regulatory agency has adopted the
10 Blount method you used here. Correct?

11 A. That is correct.

12 Q. Before you were hired by the lawyers for
13 plaintiffs in litigation, you had never even heard of
14 the Blount method. Correct?

15 A. That is correct.

16 Q. And you spoke a little bit this morning about
17 that Blount method. The truth of the matter is,
18 Dr. Longo, the Blount method cannot detect chrysotile.
19 Correct?

20 A. No, ma'am, no heavy liquid density method that's
21 being used now in the ISO method for talc can detect
22 chrysotile.

23 Q. Counsel had up on the screen six minerals that
24 are asbestos, and chrysotile is one of them. Right?

25 A. That is a regulated asbestos, yes.

1 Q. This Blount method at this time can't pick up
2 that type. Right?

3 A. Not at that heavy density liquid separation, no.

4 Q. That's part of the method. Right?

5 A. Correct.

6 Q. This Blount method also can't pick up
7 anthophyllite if it doesn't have a lot of iron.
8 Right?

9 A. That is correct.

10 Q. So two of the six types of asbestos the Blount
11 method cannot detect?

12 A. No, that's a little bit different. It can't
13 detect chrysotile but it is detecting anthophyllite.
14 It seems, though, most of the anthophyllite we're
15 looking at has heavy iron. So it definitely finds
16 anthophyllite, but only anthophyllite that has iron.

17 Q. Dr. Longo, in addition to not being able to find
18 chrysotile, your heavy liquid density separation
19 method can also miss anthophyllite if it is not the
20 heavy iron anthophyllite. Correct?

21 A. I agree with that.

22 Q. And as a result you know no regulatory agency
23 has ever adopted the Blount method. Correct?

24 A. I believe that's correct.

25 Q. And so if we can go to slide 33, the three

1 methods you used, Dr. Longo, in testing the MDL
2 samples were ISO TEM. Correct?

3 A. Yes and no. Certainly, for the methodology for
4 the morphology, but it was more based on the EPA
5 AHERA.

6 Q. You used the ISO TEM protocol to test and you
7 used different counting rules. Correct?

8 A. We used the ISO protocol, the ISO 22262-1 and
9 22262-2 for the ISO analysis, but the other standard
10 methods for the methodology. That's true.

11 Q. We're going to talk about the -- you used ISO
12 both for the regular old PLM testing. Right?

13 A. Yes.

14 Q. And you used ISO for the heavy density
15 concentration TEM testing. Right?

16 A. Correct.

17 Q. And you used Blount plus PLM. Correct?

18 A. Correct.

19 Q. And those are the methods you used for these
20 samples. Correct?

21 A. Correct.

22 Q. And before the MDL, you had issued a report a
23 couple of years ago. Correct?

24 A. Yes.

25 Q. And we're not going to talk a lot about that

1 report. By and large, what you tested there were
2 samples that the plaintiffs' lawyers had purchased off
3 of eBay. Right?

4 A. I would say 60, 70 percent. The other samples
5 came from actual plaintiffs who had saved their
6 containers of Johnson & Johnson Shower To Shower.

7 Q. And you spent about two years in courts around
8 the country talking about that testing from that
9 original report. Correct?

10 A. Until this one came out, yes.

11 Q. But the method you used in that original report
12 is different than the method you used for the MDL
13 samples. Correct?

14 A. Correct.

15 Q. You used for the original eBay report something
16 you called "modified Blount plus TEM." Correct?

17 A. Yes, but the modified Blount for the sample
18 preparation which had some slight changes in the heavy
19 density liquid and then the regulated standard methods
20 for identifying the asbestos was the same.

21 Q. And none of these methods have been adopted by a
22 government regulatory agency. Right?

23 A. I'm sorry.

24 MR. BLOCK: Assumes facts not in evidence as
25 to whether there is a government adopted test for

1 talc. Objection. Assumes facts not in evidence.

2 MS. BROWN: I can rephrase, your Honor.

3 THE COURT: Okay.

4 BY MS. BROWN:

5 Q. No government has approved any one of these
6 methods for testing cosmetic talc for asbestos.

7 Right?

8 A. I'm not aware of the FDA having this method.
9 The Environmental Protection Agency has gravimetric
10 methods for testing for asbestos, not heavy liquid
11 density, but concentrations methods by TEM, and, of
12 course, the morphology rules and identification have
13 been adopted by federal agencies because of the TEM
14 analysis. It is really working around just the sample
15 preparation.

16 Q. I want to be real specific with my question so I
17 make sure you understand.

18 No government regulatory agency has adopted
19 either ISO 22262 or the Blount method. Correct?

20 A. That's correct.

21 Q. And you were not using any of these methods
22 prior to being hired as an expert witness in
23 litigation. Correct?

24 A. Not the sample preparation portions, no.

25 Q. Dr. Longo, you mentioned this morning --

1 MS. BROWN: If I could have the ELMO, please.

2 Q. Dr. Longo, counsel had this slide up earlier
3 today talking about your credentials. Do you remember
4 that?

5 A. I do.

6 Q. And you had some questions about some of this
7 CDC, NASA, state, municipality work. Do you remember
8 that?

9 A. Yes.

10 Q. The truth, though, Dr. Longo, is that none of
11 that work had anything to do with cosmetic talc.
12 Correct?

13 A. That is correct.

14 Q. And you have never published any papers relating
15 to talc. Correct?

16 A. That is correct.

17 Q. And none of your opinions regarding the work
18 that you have done in this case have been submitted
19 for peer review publication in the scientific
20 literature. Correct?

21 A. That is correct.

22 Q. No government agency has asked you to test
23 talcum powder. True?

24 A. That is true.

25 Q. Now, you mentioned this morning, referring to

1 this slide, that your shop has an FDA lab number. Do
2 you remember that?

3 A. Yes.

4 Q. The FDA, though, has tested cosmetic talc for
5 asbestos. Correct?

6 A. Yes, sent out to a contract lab.

7 Q. And you were not asked to test cosmetic talc for
8 the FDA. Correct?

9 A. No, we didn't bid on the project.

10 Q. And the company that did the testing for the FDA
11 did not use a heavy density liquid separation
12 preparation?

13 A. No, they didn't, and that's one of the problems
14 with their testing.

15 Q. And you had a document up here referencing the
16 FDA's testing on a Claire's eye shadow product. Do
17 you remember that?

18 A. Yes.

19 Q. That's testing the FDA has done as recently as a
20 few months ago. Correct?

21 A. Correct.

22 Q. And you know that in connection with that
23 testing, the FDA commented on the testing that it had
24 done on cosmetic talc back in 2009 and 2010. Correct?

25 A. Correct.

1 Q. And you know the FDA referred to the testing it
2 did in 2009 and 2010 as using the most sensitive
3 techniques available; don't you, Dr. Longo?

4 A. They stated that but it is wrong.

5 Q. The truth of the matter is, Dr. Longo, that
6 people have been testing cosmetic talc for the
7 presence of asbestos for decades. Correct?

8 A. That is correct.

9 Q. And since you were hired as an expert witness in
10 litigation on behalf of the plaintiffs' lawyers, you
11 had been asked repeatedly in courtrooms around the
12 country when it was that you first started testing
13 cosmetic talc. Right?

14 A. That's correct.

15 Q. And as recently as April of this year in court
16 in front of a jury you testified for the first time --
17 you testified that the first time you started testing
18 cosmetic talc was about two to three years ago.
19 Right?

20 A. That's correct.

21 Q. And the fact of the matter is, is that we now
22 know that that is not true. Right?

23 A. Well, the testimony was true. But it looks like
24 that I had given some testimony some years ago that we
25 had analyzed some cosmetic talc.

1 Q. I want to talk a little bit about that. You
2 have testified on behalf of plaintiffs in hundreds of
3 cases where they are bringing a lawsuit against a
4 company that purposefully added asbestos to a product.
5 Correct?

6 A. Correct.

7 Q. And you have given in connection with that
8 expert witness work, Dr. Longo; you have given
9 hundreds if not thousands of depositions and trial
10 testimony. Correct?

11 A. That is correct.

12 Q. And one of the things you found that you were
13 often asked probably by defense lawyers in those
14 situations was about potential alternative exposures
15 that the plaintiffs may have had to asbestos. Right?

16 A. That is correct.

17 Q. So back in 2002 and 2003, when you were
18 testifying on behalf of plaintiffs' lawyers suing
19 other companies that potentially put asbestos in their
20 product, you testified about cosmetic talc. Right?

21 A. It looks like on two occasions.

22 Q. And what you testified -- this was in the
23 context of defense lawyers asking you questions if a
24 plaintiff could have been exposed to asbestos from
25 cosmetic talc. Right?

1 A. It looks that way, yes.

2 Q. And what you swore under oath back then was that
3 you and your lab MAS had done studies on the asbestos
4 content of talc. Right?

5 A. Yes.

6 Q. What you testified to is those studies had
7 included studying finished cosmetic talc products.
8 Right?

9 A. I think it was just cosmetic talc.

10 Q. Talc that was used in cosmetics. Correct?

11 A. Yes, ma'am.

12 Q. You remember that testimony?

13 A. Well, I still don't remember the testimony.
14 I've been shown it.

15 Q. And what you said back then, Dr. Longo, when you
16 were testifying against companies that made products
17 like brakes and gaskets that had asbestos in it, you
18 swore under oath that you had never found any asbestos
19 minerals in any talc used for cosmetic purposes.
20 Right?

21 A. That's what I have been shown, yes.

22 Q. And in fact, Dr. Longo, you were specifically
23 asked whether talc that was used on babies had
24 asbestos. Right?

25 A. Yes, that's the one question.

1 Q. And you said you had looked into it, that your
2 lab MAS had studied it, that you had looked into talc
3 that was used on babies, and you had not found any
4 asbestos. Right?

5 A. That's what I stated.

6 Q. And, in fact, what you said is that you had
7 looked for tremolite and anthophyllite, the two types
8 of asbestos we saw up on the screen today. Right?

9 A. I don't recall any of it. If that's what it
10 states, that's what I stated those years ago.

11 MS. BROWN: Permission to read, your Honor.

12 Could we have in the testimony binder Longo
13 561, which is a deposition Manbodh from May 28, 2002,
14 at page 106, lines 11 to 19:

15 "QUESTION: What other exposures, household
16 contacts would people have other than those that
17 you've mentioned?

18 "ANSWER: Usually, that's it.

19 "QUESTION: Talcum powder that was used on
20 babies, did some of that contain asbestos?

21 "ANSWER: We've looked. We have not found it.

22 "QUESTION: You are not aware of any?

23 "ANSWER: I'm not aware of us ever proving
24 that talcum powder had tremolite or anthophyllite."

25 That was your testimony, correct, Dr. Longo?

1 A. That's what it states, yes.

2 Q. And the truth of the matter is, Dr. Longo, back
3 in 2002 you said that the claims that cosmetic talc
4 could have asbestos were an urban legend in your
5 field. Isn't that right?

6 A. That's what the testimony says.

7 Q. And you know what an urban legend is, don't you,
8 Dr. Longo?

9 A. Yes, I do.

10 Q. And the first time I asked you that, you told me
11 an urban legend was somebody who is in an urban
12 environment has a legend. Do you remember that?

13 A. I do. I was kind of shocked what is this.

14 Q. You know now what an urban legend is. Right?

15 A. Yes, ma'am. We discussed it at that trial, and
16 I agree with you.

17 Q. It is a myth; isn't it?

18 A. Yes, it is.

19 Q. A fictional story someone is trying to portray
20 as true. Correct?

21 A. That's what an urban legend would mean in that
22 context.

23 Q. I want to talk a little bit, Dr. Longo, about
24 the nature of your findings here and the nature of
25 your opinions.

1 So to be clear, you are not giving any
2 opinions here about health effects. Correct?

3 A. That is correct.

4 Q. You are not testifying about any alleged health
5 effects from fibrous talc. Correct?

6 A. That's correct.

7 Q. Or cleavage fragments or what you have
8 identified as regulated asbestos, none of that.
9 Right?

10 A. That is correct.

11 Q. And let's talk a little bit about the percentage
12 of asbestos that the folks working at your shop have
13 claimed to find here. If we could look at the
14 overview slide of the findings.

15 The amount of asbestos that your analysts
16 claim to have found in Johnson & Johnson products is
17 well below 1 percent. Correct?

18 A. That is correct.

19 Q. And so here are your MDL findings, and they
20 range in number. For example, we highlighted here the
21 highest concentration that your folks claim to have
22 found in a 1991 bottle is .0092 percent. Do you see
23 that?

24 A. I do.

25 Q. That is 9.2 thousandths of a percent. Right?

1 A. That is correct.

2 Q. And the lowest concentration, in fact, that your
3 folks claim to have found in a finished product is
4 .000033 percent. Right?

5 A. Correct.

6 Q. If we could go to the next slide with those two.
7 And that's 3.3 millionths of a percent. Correct?

8 A. Yes.

9 Q. And you, Dr. Longo, yourself have described
10 levels like that as ultra trace?

11 A. Correct.

12 Q. And in many of the MDL samples your analysts
13 didn't detect any asbestos at all. Correct?

14 A. Let's see. There was 31 percent non-detect.

15 Q. So there were bottles from Vermont where your
16 analysts detected no asbestos. Correct?

17 A. Correct. Bottles from Italy that were at
18 non-detect.

19 Q. And what you state in your report, Doctor, is
20 that you were of the opinion that individuals who used
21 Johnson & Johnson talcum powder products in the past
22 would have more likely than not been exposed to
23 significant airborne levels of both regulated
24 amphibole asbestos and fibrous asbestiform talc.
25 Right?

1 A. That's correct.

2 Q. So it is your opinion that individuals who used
3 this product have a significant exposure. Correct?

4 A. Yes.

5 Q. But you haven't done in this MDL an exposure
6 analysis. Correct?

7 A. Not with these samples, no.

8 Q. Meaning you have not calculated, Dr. Longo,
9 whether or not it is even possible for those ultra,
10 ultra trace levels that we just looked at to make it
11 out of a bottle and into a human being who is using
12 that product as a consumer. Correct?

13 A. We haven't done that study. If it is in the
14 bottle, and even though those, quote, ultra, trace
15 concentrations are still very significant, it is going
16 to get out of the bottle, will get up in the air, and
17 be in the breathing zone.

18 THE COURT: How do you use the term
19 "significance"?

20 THE WITNESS: I term it as, can we measure it?
21 So it is 10 to 20 times above background. In this
22 case, there is very little to no background involving
23 tremolite and anthophyllite. It is not on a health
24 basis. It is, is there an exposure?

25 MS. BROWN: May I follow up on that, your

1 Honor?

2 THE COURT: Yes.

3 BY MS. BROWN:

4 Q. You just said 10 to 20 times above background.
5 The fact of the matter here, as it relates to the MDL
6 samples, you haven't measured or calculated anything
7 at all?

8 A. Not with the MDL samples.

9 Q. And it is not that your facility at MAS doesn't
10 know how to do an exposure simulation, Right?

11 A. Right. We have done those, not with the MDL
12 samples.

13 THE COURT: What was your opinion based on; it
14 was significant in the MDL?

15 THE WITNESS: That it is significant in that
16 they would have had an exposure that more than half of
17 the samples that we measured were positive for
18 asbestos. We have done exposure calculations in the
19 past with Johnson & Johnson in which we have
20 calculated these exposures with Johnson & Johnson
21 products and made a measurement.

22 THE COURT: How about these samples that you
23 were given?

24 THE WITNESS: No, ma'am.

25 THE COURT: You may proceed.

1 BY MS. BROWN:

2 Q. In fact, though, Dr. Longo, even though you have
3 done no study to quantify whether or not an individual
4 using any of the samples in the MDL would have any
5 exposure, you do know that by using any of the samples
6 in the MDL, an individual would not have an exposure
7 greater than OSHA's permissible exposure limit for an
8 eight-hour average. Correct?

9 A. That is correct.

10 Q. And just to orient us on that, OSHA regulates
11 the amount of asbestos that workers can be exposed to
12 in something called a Permissible Exposure Limit. You
13 are familiar with that. Right?

14 A. Yes, I'm familiar for an industrial site and a
15 working site. OSHA doesn't regulate in residential
16 homes especially infants and children that would have
17 the potential to be exposed at some point.

18 Q. And the OSHA PEL limit is .1 fibers per c.c.,
19 right?

20 A. Yes.

21 Q. And you know that they haven't done a specific
22 calculation, any consumer exposure for an eight-hour
23 time-weighted average would be less than the OSHA PEL.
24 Correct?

25 A. That is correct.

1 Q. And you have no reason, Dr. Longo, because you
2 haven't done the calculation, to dispute the findings
3 of defense expert Dr. Nadia Moore as it relates to
4 exposure levels. Correct?

5 A. I haven't seen that report.

6 Q. Well, the asbestos briefing was listed as a
7 supplemental item that you reviewed and relied on.
8 Did that make it to you?

9 A. It made it to me but I haven't reviewed the
10 whole report, no.

11 Q. Fair enough. Dr. Moore's report, for the Court,
12 at page 43, indicates, for example, that the annual
13 average exposure to asbestos fibers from ambient air
14 is more than three times higher than the alleged
15 exposure from talc.

16 You, for example, have not done any study to
17 dispute that?

18 A. I haven't done the study, but you can't have an
19 ambient level and then have an additional exposure and
20 not add to that. That doesn't make a lot of sense to
21 me. I have seen that in the past many times. If you
22 say there is an ambient level, any additional exposure
23 is adding to that ambient level. You can't have an
24 exposure lower than the ambient level if you are
25 saying there is asbestos there.

1 Q. And you have not done any calculations as it
2 relates to the MDL samples on how, if at all, if a
3 consumer's exposure would relate to any other exposure
4 limits. Correct?

5 A. In dealing with the MDL samples only, you are
6 correct.

7 Q. What you have done, though, Doctor, in the past
8 is testified about whether a person could be exposed
9 to asbestos from a product that only contained a trace
10 level of asbestos. Right?

11 A. That is correct.

12 Q. And you and I talked about that some a couple of
13 months ago in front of a jury in South Carolina.
14 Right?

15 A. Yes, ma'am.

16 Q. And what you testified to was that something
17 called thin set cement, is a very dusty product.
18 Right?

19 A. During the mixing, that's correct.

20 Q. Because what happens with this product is that
21 if you got to take the cement and add water to it and
22 mix it up. Right?

23 A. Yes.

24 Q. And during the process of doing that, the person
25 doing the mixing, and everybody else around them,

1 could inhale a number of fibers. Right?

2 A. That's correct.

3 Q. And you have given testimony in the past in a
4 case involving thin set cement, that contained
5 1 percent asbestos. Right?

6 A. Yes. I thought it was trace.

7 Q. Well, 1 percent is trace and less than
8 1 percent, Dr. Longo, less than .1 percent, according
9 to you, is ultra trace. Right?

10 A. Well, the term for ultra trace is five zeros.
11 For me, trace is below 1 percent.

12 Q. And so you testified in a case regarding the
13 thin set cement product that contained less than
14 1 percent asbestos. Right?

15 A. That's correct.

16 Q. And the question that was posed to you was
17 whether a person who was mixing up that cement 20
18 times a day for 40 years would have a significant
19 exposure to asbestos. Right?

20 A. That is correct.

21 Q. And your testimony under oath in that case was
22 that because the product only contained 1 percent
23 asbestos --

24 A. I thought there was less than 1 percent, trace
25 amounts.

1 Q. Less than 1 percent, the individual would not
2 have a significant exposure. Right?

3 A. I think I said it a little differently. If you
4 don't mind, we can read it.

5 Q. Sure.

6 MS. BROWN: Your Honor.

7 Q. We're looking at your testimony, Longo 555. It
8 is a deposition you gave April 29, 1997, Sorise
9 deposition.

10 A. What was the number?

11 Q. Longo 555, page 159, lines 10 to 23, and you
12 were asked this question:

13 "QUESTION: Let me ask you to assume that
14 someone for a period of around 40 years, that that
15 person either mixed thin set cement between 1 and 20
16 times a day, and they did this for 40 years. Do you
17 have an opinion at all regarding the nature or extent
18 of that exposure to asbestos?"

19 There was an objection. Your answer?

20 "ANSWER: Since it is thin set cement that has
21 only trace levels of asbestos chrysotile in it, I
22 don't believe that would be very large exposure at
23 all."

24 That was your testimony. Correct?

25 A. Yes.

1 Q. Dr. Longo, I want to talk a little bit about
2 what is and what is not asbestos.

3 And if we could look at slide 1, please.

4 Dr. Longo, you have seen this or a similar
5 slide before. Correct?

6 A. I have.

7 Q. To start, we can agree that not all amphiboles
8 is asbestos?

9 A. Yes.

10 Q. Amphibole minerals occur in both the asbestiform
11 and non-asbestiform habits. Correct?

12 A. That's correct.

13 Q. And so, for example, there are two kinds of
14 tremolite: one that is asbestos and one that is not.
15 Correct?

16 A. No. You can argue over the asbestiform. If it
17 meets the standard methodology that we use to identify
18 asbestos, it is regulated asbestos.

19 MS. BROWN: Permission to read, your Honor?

20 THE COURT: Yes.

21 Q. Longo 521, October 25th, 2017, Herford trial
22 testimony at page 1377 lines 2 through 5:

23 Again, this is the October 25th, 2007, Herford
24 trial testimony at page 1377, lines 2 to 5:

25 MS. BROWN: We'll go back to that.

1 THE COURT: You can just read it.

2 MS. BROWN: It is going up now.

3 Q. You were asked, Dr. Longo, during this Herford
4 trial:

5 "QUESTION: Okay. Now, you will agree there
6 are two kinds of tremolite: one that is asbestos and
7 one that isn't. Right?

8 "ANSWER: I would agree."

9 Correct?

10 A. That's correct. If that's the question you
11 asked me, I apologize. I misunderstood.

12 Q. The word tremolite, Dr. Longo, does not
13 automatically mean asbestos. Correct?

14 A. That's correct.

15 Q. A cleavage fragment is not asbestos. Correct?

16 A. That is correct, if it is a true cleavage
17 fragment it is not asbestos.

18 Q. A cleavage fragment is a crushed up piece of
19 non-asbestiform rock. Correct?

20 A. That is correct.

21 Q. Now, I want to talk, Dr. Longo, you had some
22 slides this morning relating to the same topic that
23 I'm talking about here, what is and what is not
24 asbestos, and I want to ask you some questions about
25 those, if I could just switch over to the ELMO.

1 This was one of the slides that counsel showed
2 you this morning. Do you recall talking about this
3 slide?

4 A. Yes.

5 Q. And you had some questions and answers regarding
6 what an asbestiform mineral is from the McCrone
7 Particle Atlas. Correct?

8 A. Yes.

9 Q. And the very next slide you were shown was this
10 one from the EPA AHERA regulation. Do you see that?

11 A. I do.

12 Q. And this is AHERA's definition of a fiber.
13 Correct?

14 A. That is correct.

15 Q. But you know, of course, that AHERA, the
16 regulation, defines asbestos. Right?

17 A. Correct.

18 Q. And you didn't put that definition above. So I
19 want to show it, if we could go to slide No. 4,
20 please.

21 AHERA defines asbestos as the asbestiform
22 varieties of chrysotile, crocidolite, amosite,
23 anthophyllite tremolite and actinolite. Correct?

24 A. That's correct.

25 Q. And AHERA also defines asbestiform?

1 A. Correct.

2 Q. And AHERA makes a distinction between
3 asbestiform and non-asbestiform minerals. Correct?

4 A. That's what AHERA states. That's not true;
5 that's a general definition for asbestos-added
6 products.

7 Q. Let's look at the AHERA table at Longo 516 AHERA
8 at page 80, please.

9 You know, Dr. Longo, that in fact all of the
10 regulatory authorities including those on which you
11 rely in this case have a definition of asbestos.
12 Right?

13 A. Asbestiform.

14 Q. Well, we're going to look at the definition of
15 asbestos. But let's talk quickly about AHERA's table
16 here, the asbestos minerals and their non-asbestiform
17 analogs. Do you see that?

18 A. I do.

19 Q. And AHERA makes the distinction between
20 asbestiform minerals and non-asbestos minerals.
21 Correct?

22 A. That is correct.

23 Q. And just going backwards in the outline here,
24 OSHA is another health-based organization you are
25 familiar with. Right, Doctor?

1 A. I am.

2 Q. And you know OSHA also defines asbestos.

3 Correct?

4 A. It does.

5 Q. And what OSHA defines asbestos as is including
6 chrysotile, amosite, crocidolite, tremolite asbestos,
7 anthophyllite asbestos and actinolite asbestos.

8 Correct?

9 A. That is correct.

10 Q. And what OSHA says, if we could go to slide 3,
11 please, is that for purposes of this regulation, the
12 mineral must be one of the six minerals covered and
13 must be in the asbestos growth habit. Correct?

14 A. Correct.

15 Q. And you know, Dr. Longo, that OSHA in particular
16 changed the definition of asbestos in 1992
17 specifically to exclude the non-asbestiform minerals
18 from its definition. Correct?

19 A. That's what they stated.

20 Q. And in addition to OSHA and EPA, you know ISO,
21 the regulation you rely in part in this case, it also
22 has a definition of asbestos; does it not?

23 A. It does.

24 Q. And if we could look at slide 6, we'll look at
25 how OSHA defines asbestos.

1 THE COURT: ISO. You said "OSHA."

2 Q. ISO's definition of amphibole asbestos is
3 "amphibole in an asbestiform habit." Correct?

4 A. Correct.

5 Q. Now, I want to talk a little bit, then,
6 Dr. Longo, about the definition of asbestos that you
7 employed in your report. Okay?

8 A. Using the standard methodology, that is correct.

9 Q. So for purposes of your report, Dr. Longo, you
10 have used a definition of a counting rule. Correct?

11 A. Well, it is the methodology for determining the
12 morphology. So it gives you the dimensions of what
13 asbestos is.

14 Q. And, so, when you state, for example, in your
15 report here, your February 1st, 2019, MDL report, that
16 "amphibole fibers or bundles with substantially
17 parallel sides and an aspect ratio of 5-to-1 or
18 greater and at least .5 microns in length were counted
19 as regulated asbestos fibers and bundles per standard
20 TEM counting rules."

21 Correct?

22 A. Correct.

23 Q. And those were some of the counting rules that
24 you described this morning, correct?

25 A. That is correct.

1 Q. If we could just go back to the ELMO for a
2 second. This was AHERA's definition of a fiber that
3 you pointed to this morning. Correct?

4 A. Correct.

5 Q. And you used the AHERA talcum powder counting
6 rules as part of your report here. Correct?

7 A. For the morphology determination, yes.

8 Q. But, Dr. Longo, when you crush up a
9 non-asbestiform rock, it can shatter into long and
10 thin pieces. Correct?

11 A. Sometimes, yes.

12 Q. And those long, thin cleavage fragments can
13 actually resemble asbestos fibers. Correct?

14 A. That can happen.

15 Q. In fact, what can happen is that
16 non-asbestiform, the non-asbestiform version of these
17 minerals, when it is crushed up, it can generate
18 particles that have a minimum length greater than or
19 equal to .5 microns, an aspect ratio of 5-to-1, and
20 substantially parallel sides. Right?

21 A. There is a slight chance of that but the
22 probability is not too high. But, certainly, it might
23 happen.

24 Q. Well, Dr. Longo, in fact, the ISO standard on
25 which you rely says that, generally, when you crush up

1 the non-asbestiform rock, it is going to cleave in
2 elongated fragments that conform to the counting rules
3 definition of a fiber. Right?

4 A. It does say that, but you have to look at the
5 totality of what you are analyzing here. If you look
6 at the Blount chart, if you look at the Campbell
7 chart, if you look at what happens to talc, tremolite
8 and anthophyllite, the overwhelming majority of these
9 cleavage fragments are less than 3-to-1 aspect ratio
10 as compared to the ones they say are longer, and what
11 they compare to tremolite asbestos. I understand your
12 point. But it is not affecting the analysis of what
13 regulated asbestos is.

14 Q. You said a lot, and we're going to talk about
15 cleavage fragments. You said the overwhelming
16 majority of these fragments are less than 3-to-1. Did
17 I hear you right?

18 A. In the Blount and Campbell articles, yes.

19 Q. You don't know if the overwhelming majority of
20 particles in the the MDL samples are less than 3-to-1.
21 Right?

22 A. Well, we didn't count those. But the
23 overwhelming majority of the particles we did count
24 are not cleavage fragments; they are bundles of
25 fibers.

1 Q. You did not count in your analysis of the MDL
2 samples any particles that were less than an aspect
3 ratio of 3-to-1. Right?

4 A. That is correct, but in previous work where
5 we've looked at tremolite, anthophyllite, the amount
6 of 3-to-1, and adding everything that's there, only
7 moved the needle about one point.

8 Q. Dr. Longo, I don't want to get involved in other
9 testing you have done. I want to talk about what you
10 did in the MDL. And just to close the loop on this,
11 in the MDL you didn't count or record or document or
12 give us any information that would show that you
13 quantified the number of particles that were less than
14 a 3-to-1 aspect ratio. Right, sir?

15 A. Just speaking about the MDL, that is correct.

16 Q. So we could look at slide 11, please. This
17 comes from the ISO definition of cleavage fragment,
18 and this is one of the ISO standards on which you
19 rely, and defined the cleavage fragment as a fragment
20 of a crystal that's bounded by cleavage basis.

21 Correct?

22 A. That's correct.

23 Q. And the note that the ISO standard on which you
24 rely has here is that the crushing of non-asbestiform
25 amphiboles generally yields elongated fragments that

1 conform to the definition of a fiber but rarely have
2 aspect ratios exceeding 30-to-1. Correct?

3 A. That's what it states.

4 Q. Crushing up -- just because you crush up a
5 non-asbestiform rock, it can never magically make that
6 rock a piece of asbestos. Correct?

7 A. If it does not meet the methodology and the
8 counting rules, no, it cannot be counted as asbestos.

9 Q. If you start out with a non-asbestiform rock and
10 you crush it up, even if it crushes into pieces that
11 measure up to your definition of a fiber, there is not
12 some magical transformation that happens that turns
13 those pieces into asbestos. Right?

14 A. No, there is no magic involved here. If it
15 meets the definition, it is a regulated asbestos
16 fiber. But, as I've stated, most of the particles we
17 have counted are bundles which by definition, no
18 matter what the aspect ratio is, are not cleavage
19 fragments.

20 Q. I have questions about the bundles.

21 But to clear this out, Dr. Longo, you can't
22 take pieces of non-asbestos rock, break it up and call
23 it asbestos. Correct?

24 A. If it is all non-asbestos rock and there is no
25 asbestos particles in there, that is correct.

1 Q. But what you have testified to in the past,
2 Dr. Longo, is that when one of your analysts sees a
3 non-asbestiform amphibole cleavage fragment, if it has
4 substantially parallel sides, if it has an aspect
5 ratio of 5-to-1 or greater and it is at least
6 .5 micrometers long, the analyst will count that as a
7 regulated asbestos structure. Correct?

8 A. If the analyst knows it is a cleavage fragment,
9 in the TEM, or we don't count cleavage fragments in
10 the PLM, no, you wouldn't count it. If it meets the
11 standard methodology for the counting rules by EPA,
12 10-to-1, they reject it, 5-to-1, it has the chemistry,
13 it has the right electron diffraction patterns, you
14 would count that.

15 MS. BROWN: Permission to read, your Honor?

16 THE COURT: Yes.

17 BY MS. BROWN:

18 Q. From the Longo testimony, binder at tab 511, I
19 would like to read a question and answer, Dr. Longo,
20 from your February 26, 2019, Olsen trial testimony at
21 page 1717, lines 3 to 13:

22 "QUESTION: When your firm MAS is analyzing
23 talc samples, if one of your analysts who is
24 conducting the test sees a non-asbestiform amphibole
25 cleavage fragment, it has substantially parallel

1 sides, if an aspect ratio of 5-to-1 or greater, and is
2 at least 5.5 micrometers long, the analyst will count
3 that as an asbestos structure. True?

4 "ANSWER: Meets that definition, that is true.

5 "QUESTION: If he finds those things, he will
6 count it as an asbestos structure. Correct?

7 "ANSWER: As a regulated asbestos in that
8 population, yes."

9 A. No. It's not that the analyst knew it was a
10 nonasbestos amphibole cleavage. It's if that
11 amphibole cleavage was there and it met the
12 definition, they would count it. The analyst --

13 Q. Dr. Longo, this was your testimony during the
14 Olsen trial. Correct?

15 A. I see it written there. I don't see what else
16 was asked in that. In TEM that is one of the issues.
17 An analyst would not count if he knew somehow it met
18 the definition it was nonasbestos amphibole cleavage
19 fragment. No, he would not count that if he knew.

20 THE COURT: She put it into the question. It
21 says: If your analyst is conducting the test and sees
22 a non-asbestiform amphibole cleavage fragment -- it
23 says it in that question that is what they are they
24 are seeing.

25 THE WITNESS: I see that.

1 Q. And your answer was:

2 "Yes, it meets that definition. And if he
3 finds it -- see, if he finds those things, a
4 non-asbestiform amphibole cleavage fragment, he will
5 count it as an asbestos structure."

6 And your answer was:

7 "As a regulated asbestos in that population,
8 yes."

9 That was your answer. Correct?

10 A. I would have to see if there is something more
11 to it, but that is what it states, yes.

12 Q. And one of the things you told us, Dr. Longo, is
13 that where you are identifying individual fibers as
14 asbestos, you are not trying to make a determination
15 about whether those minerals grew in the asbestiform
16 habit?

17 A. Or a single fiber without any information,
18 that's correct.

19 Q. But, Dr. Longo, the ISO method on which you rely
20 in fact says that it is necessary to discriminate
21 between the asbestiform and non-asbestiform analog of
22 these minerals; doesn't it?

23 A. That's correct.

24 Q. Let's take a look if we could at Exhibit A 75,
25 which is the ISO 22262-2 method that you rely on, and

1 I'll direct everyone's attention to page 14.

2 What this method is talking about are
3 tremolite, actinolite, richerite and winchite.
4 Correct?

5 A. That's correct.

6 Q. And what this ISO standard on which you rely
7 states is that these types of minerals generally occur
8 as accessory minerals. Correct?

9 A. That's what it states.

10 Q. And what this ISO method on which you rely
11 states is that since the non-asbestiform analogs of
12 the amphiboles are not generally regulated, it is
13 necessary to discriminate between the asbestiform and
14 the non-asbestiform analogs of those minerals.
15 Correct?

16 A. That is correct.

17 Q. Nevertheless, Dr. Longo, in making your call,
18 when your analysts are making the call, what they are
19 seeing measures up to a counting rule definition of a
20 fiber. They are not purporting to determine whether
21 or not that particle is asbestiform or not. Right?

22 A. The analysts do not make that decision, but they
23 are asbestiform. Asbestiform is the sample definition
24 of that. It forms like asbestos or fibrous,
25 especially the bundles. As pointed out by EPA, when

1 they look at the counting criteria for the aspect
2 ratio of 5-to-1 to 10-to-1, that most of the cleavage
3 fragments in analogs fall below 5-to-1.

4 Jim Millete pointed out, the best aspect ratio
5 is 5-to-1 and greater, as pointed out in Blount and
6 Campbell for --

7 Q. Dr. Longo, can you get a little closer to the
8 microphone.

9 Let's do this real quick. Where your analysts
10 identify individual fibers as asbestiform, they are
11 not purporting to make any determination as to whether
12 they grew in the asbestiform habit. True or not?

13 A. The analysts are not making that decision. The
14 only decision they are making is that it is fibrous,
15 which meets the asbestiform definition, and does it
16 have the morphology as stated by the Environmental
17 Protection Agency for regulated asbestos.

18 THE COURT: Your answer to the question was,
19 yes, they are not making that decision. Is that what
20 I heard?

21 THE WITNESS: Yes, ma'am.

22 THE COURT: Thank you.

23 Q. Let's talk in a little bit detail about the
24 AHERA regulation on which you rely. Okay?

25 A. Yes.

1 Q. You used the AHERA counting rules in this case.
2 Correct?

3 A. That is correct.

4 Q. And what AHERA is, it is a regulation that
5 stands for the Asbestos Hazard Emergency Response Act.
6 Correct?

7 A. That is correct.

8 Q. If we could take a look at slide 12, please.

9 What this regulation is really all about,
10 Dr. Longo, is when there has been asbestos found in
11 schools and it's been remediated, this regulation is
12 concerned about going back in and making sure the
13 school is safe for kids to go back. Correct?

14 A. Correct.

15 Q. So these counting rules that you rely on here
16 come from a regulation that is aimed at making sure
17 schools have been rid of asbestos. Correct?

18 A. The air samples are clean enough to allow people
19 back in, yes.

20 Q. But what that means, Dr. Longo, is that before
21 these regulations even come into play, you've had a
22 determination that there is asbestos-containing
23 materials in a school. Right?

24 A. Yes, that's correct.

25 Q. And asbestos-containing materials per this

1 regulation mean more than 1 percent. Correct?

2 A. Correct.

3 Q. And so what AHERA contemplates as No. 1, someone
4 has found more than 1 percent asbestos-containing
5 material in a school. True?

6 A. Yes, at times. If they -- only if the schools
7 or the institute decide that they feel that there is
8 no asbestos there, they have to test it. So for -- so
9 information to the schools, if they agree there is
10 asbestos, they don't have to do the testing. You are
11 only required to do the testing to determine asbestos
12 if you say there is no asbestos.

13 Q. First of all, there has been a determination of
14 an asbestos-containing material. Correct?

15 A. Correct.

16 Q. Second, there has been remediation at the
17 school. Right?

18 A. Correct.

19 Q. And then there is testing that's being done to
20 make sure that the school is safe for kids to go back
21 in. Right?

22 A. Correct.

23 Q. That's the context of these counting rules on
24 which you rely and which we saw in your PowerPoint
25 presentation with counsel. Right?

1 A. That's correct.

2 Q. And so if we look back at the Elmer, for
3 example, this definition of a fiber comes from that
4 same regulation we were just looking at. Right?

5 A. Yes.

6 Q. A regulation that doesn't even apply until there
7 has been a determination that there was at least a
8 1 percent asbestos-containing material in a school.
9 Right?

10 A. Sort of. It's based on the asbestos-containing
11 material as well as the same material that has
12 accessory minerals in it that include things like
13 tremolite, richerite -- and you have to understand,
14 even though, say, for W.R. Grace Monokote
15 Fireproofing, the majority of that material is made up
16 of Libby Montana vermiculite. Not only would you be
17 looking at the chrysotile there, you would be looking
18 at the accessory minerals tremolite, actinolite, and
19 that would be part of it.

20 A lot of these asbestos products like Zonolite
21 acoustical plastic have a lot of accessory minerals
22 that are tremolite and actinolite. So the laboratory
23 who was analyzing the samples may never have any idea
24 on what was taken out of the building. They just
25 count it the same all the way through.

1 Q. My question is much simpler than that. Let's do
2 it like this or we can read it and put it on the
3 screen: The question is: Before the counting rules
4 from AHERA ever come into play, you've had an analysis
5 that has found already in that school
6 asbestos-containing materials. Correct?

7 A. Maybe. They have some idea that there is
8 asbestos there. If they did the PLM analysis, yes.

9 Q. If it has been analyzed, that's correct?

10 A. That is a correct statement.

11 Q. The answer to my question, if someone has gone
12 in and analyzed it, there has been a determination
13 that the school contained asbestos-containing
14 materials. Correct?

15 A. Correct.

16 Q. And that's when the counting rules on which you
17 rely come into play. Right?

18 A. When you do the TEM analysis for any air sample
19 that has to do with that, outside, inside, you use the
20 standard methodology by the EPA to identify asbestos.

21 Q. My question was real simple. That is when the
22 counting rules on which you rely come into play,
23 right, Dr. Longo, when you use that protocol, that
24 standard methodology for any type of air sample
25 analysis, that would be correct, or any TEM analysis?

1 And, you know, because we just look at the
2 review of the levels that your analysts are claiming
3 to find here, the levels of asbestos your analysts
4 claim to find in Johnson & Johnson's product is
5 nowhere near 1 percent. Right?

6 A. They are less than 1 percent, that's correct.

7 Q. Significantly less than 1 percent. Right,
8 Dr. Longo?

9 A. Two to three orders of magnitude less.

10 Q. 3.3 millionths of a percent. Right, Doctor?

11 A. And higher.

12 Q. Up to 9.2 thousandth of a percent. Right?

13 A. Hundreds, thousands, three orders of magnitude.

14 Q. That's as high as it gets. Right?

15 A. For these samples, that's correct.

16 Q. I want to talk a little bit about your visual
17 TEM that your analysts in this case did. Okay?

18 A. Yes.

19 Q. Just to orient us, this TEM methodology, it
20 cannot tell me the difference when it comes to a
21 single fiber about whether or not it is asbestiform or
22 non-asbestiform. Right?

23 A. I think I have agreed in the past, looking at a
24 single fiber in a vacuum versus looking at a
25 population from a mine, numerous samples that what you

1 can say is regulated asbestos. But without any
2 additional information, I would not call it
3 asbestiform or non-asbestiform.

4 Q. You have been asked this question before.
5 Right?

6 A. Yes.

7 Q. Let's just see if we can agree and move on.

8 TEM cannot tell you if you identify a single
9 fiber whether or not it is asbestiform or
10 non-asbestiform. Correct?

11 A. Correct. I think I've been asked if it is in a
12 vacuum with no other information other than saying
13 it's regulated asbestos it would not say it's
14 asbestiform or non-asbestiform.

15 MS. BROWN: Permission to read, your Honor?

16 THE COURT: Yes.

17 MS. BROWN: Could I have Longo 666. This is
18 your trial testimony from February 20th, 2018, from
19 the Lanzo trial. I'll read page 3021, lines 4 to 9:

20 "QUESTION: My question to you, Dr. Longo, is
21 that transmission electron microscopy cannot tell you
22 if you identify a single fiber whether or not that
23 particle is asbestiform or non-asbestiform. Correct?

24 "ANSWER: That is correct."

25 Now, in addition, Dr. Longo, to your testimony

1 on this score, the ISO TEM method on which you rely
2 also states that it cannot discriminate between
3 individual fibers of asbestos and non-asbestos
4 amphiboles of the same amphibole mineral. Correct?

5 MR. BLOCK: Can you state which ISO standard
6 you are referring to by number, please.

7 MS. BROWN: ISO 13794, 1999, at page 8,
8 section 1.1. It is also on the slide.

9 BY MS. BROWN:

10 Q. Dr. Longo, this TEM method on which you rely
11 states right on its face, does it not, that the TEM
12 method cannot discriminate between individual fibers
13 of asbestos and non-asbestos analogs, correct?

14 A. That's what that particular method says for the
15 analysis of TEM samples.

16 Q. And that's the method that your analyst used to
17 analyze cosmetic talc. Correct?

18 A. No. We used the ISO 13794 for the definition of
19 fibers. The ISO 22262-1-2 provides the methodology
20 and it is the only method out there for cosmetic talc.

21 Q. You know, Dr. Longo, because you read it and
22 rely on it that ISO 22262-2 refers to this method as
23 indispensable for TEM analysis. Correct?

24 A. Correct.

25 Q. Now, while you have agreed that for a single

1 fiber you cannot distinguish between asbestiform and
2 non-asbestiform, in your view, Dr. Longo, when your
3 analyst identifies a bundle, it is by definition
4 asbestiform. Correct?

5 A. Correct.

6 Q. And your original report on the eBay samples was
7 done using TEM. Correct?

8 A. Correct.

9 Q. And we spoke earlier this morning, you used a
10 modified Blount preparation and paired that with TEM
11 for your March 2018 report. Right?

12 A. Correct.

13 Q. And that report, as we spoke about earlier, was
14 by and large from eBay samples purchased by the
15 plaintiffs' lawyers. Correct?

16 A. Correct.

17 Q. And that report was the subject of your
18 testimony around the country for about two years.
19 Correct?

20 A. I think that's correct, yes.

21 Q. You are not using that methodology here as it
22 relates to the MDL samples. Correct?

23 A. No. It's the same thing. The ISO 22262-2 heavy
24 liquid density separation is almost identical to the
25 Blount separation.

1 Q. But you know it is not the same at all?

2 A. That is not true. It uses the centrifuge and
3 the heavy liquid density. The main difference is it
4 has a 2.81 density versus the --

5 THE COURT: Keep your voice up.

6 THE WITNESS: -- has 2.85. It is very close.

7 Q. The method you used for the beginning of your
8 testimony in this litigation, Dr. Longo, it was
9 modified from Dr. Blount's paper. Correct?

10 A. Correct.

11 Q. And you changed some things in Dr. Blount's
12 method. Correct?

13 A. Correct. We changed that from the 2.81 heavy
14 liquid density, and we went to 2.85, and we used TEM
15 instead of PLM.

16 Q. And you changed how long you spun the
17 centrifuge. Correct?

18 A. We changed the RPMs and we changed the length of
19 time.

20 Q. And unlike Dr. Blount, she paired her
21 preparation with PLM in your original report that you
22 are not using anymore; you paired that with TEM.
23 Correct?

24 A. Yes, ma'am.

25 Q. And this modified Blount plus TEM method is not

1 a method you have used to test the MDL samples.

2 Correct?

3 A. I would disagree because it is the same protocol
4 that we modified to. Go over it. We used 2.85 heavy
5 liquid density separation in the Blount method. We
6 used that in the ISO 22262-2 per as the method. We
7 used transmission electron microscopy instead of PLM
8 in the Blount method. In the 22262-2 it says you can
9 use this preparation for PLM, SEM and TEM.

10 Q. How long do you spin the samples with the
11 modified plus TEM?

12 A. I believe it was 60 minutes or so.

13 Q. How long do you spin the samples in the MDL?

14 A. I believe they are the same.

15 Q. Let's move on, Dr. Longo.

16 In your original report you found that
17 53 percent of the structures that your analysts were
18 reporting were bundles. Correct?

19 A. Correct.

20 Q. And in your MDL report, which now employs the
21 ISO methodology and -- are I'll rephrase the question.

22 Now, in your updated MDL report, Dr. Longo,
23 your analysts are now finding 93 percent bundles.

24 Correct?

25 A. That is correct.

1 Q. And that is in fact an increase of 40 percent in
2 the number of bundles that your analysts purported to
3 find in your original report versus your MDL report.
4 Correct?

5 A. That's correct. But you are not really
6 comparing the same thing between the two.

7 Q. What I want to compare, Dr. Longo, are some of
8 the pictures from your original report with some of
9 the pictures from your MDL report.

10 So if we could look at Longo at 520 A, this is
11 an image on the left from your 2017 report where your
12 analysts concluded that they were looking at a single
13 fiber. Correct?

14 A. That's correct.

15 Q. And the image on the right is from your MDL
16 report where your analysts concluded they were looking
17 at a bundle. Correct?

18 A. Correct.

19 Q. And to orient us again about this bundle fiber
20 business, when it's a single fiber, you can't tell if
21 it is asbestiform or non-asbestiform, but in your
22 view, when it is a bundle, it is by definition
23 asbestiform. Right?

24 A. Well, no. Wait a minute. When we have a
25 population of fibers here and not all just 5 to 1 or

1 greater but 10-to-1, 20 to 1, 30-to-1, and they are
2 coming out of a population in a particular mine and a
3 particular container, they meet the definition of
4 asbestiform because asbestiform definition is fibrous-
5 like asbestos. So we are not dealing with every time
6 you see a single fiber that meets the standard
7 methodology that you have a population of them in a
8 population of bundles that's asbestiform.

9 Q. Dr. Longo, in your opinion a bundle is by
10 definition asbestos. True?

11 A. Asbestiform, a single fiber is asbestos if it
12 meets the definition.

13 Q. In your opinion, a bundle is by definition
14 asbestiform. Correct?

15 A. Yes.

16 Q. And in your original report the picture on the
17 left shows a call by your analyst that it is a single
18 fiber, and the picture on the right shows a call it is
19 a bundle. Correct?

20 A. Yes.

21 Q. The next one, this is a picture on the left from
22 your 2017 report where your analyst at MAS made the
23 call it was a single fiber. True?

24 A. That is true.

25 Q. And we have a picture on the right where your

1 analyst made a call it was a bundle. Correct?

2 A. That is correct.

3 Q. One more, Dr. Longo, comparison from the two
4 reports. We have a picture on the left here from the
5 2017 report where your analysts concluded this was a
6 single fiber, and a picture from the right where the
7 call was made that it was in fact a bundle. Correct?

8 A. That is correct.

9 Q. And the truth is, Dr. Longo, when it comes to
10 the determination about whether something is a single
11 fiber or a bundle, you rely on your analysts to
12 correctly distinguish between a single fiber and a
13 bundle. Correct?

14 A. That is correct.

15 Q. And this determination is it a fiber or a bundle
16 is not something the microscope automatically does.
17 Right?

18 A. It does not automatically do it.

19 Q. This is a determination made by the analyst
20 sitting down and looking at the samples. Correct?

21 A. Yes. The analyst is sitting down looking at the
22 sample.

23 THE COURT: You have to stay closer to the
24 microphone, please.

25 A. The analyst can change the focal plane. The

1 analyst can flip in another type of lens that
2 increases the magnification by 10,000 times -- excuse
3 me -- 10 times. So the analyst is making the
4 decision. These are two different things. One is .4.
5 One is .2. And the analyst can see that while he is
6 doing it. The one before that you can actually see
7 some of these fibers protruding at the end of it. So
8 the analyst does make the decision, but these are some
9 that you are looking at it on a two-dimensional plane.
10 You have to be sitting at the microscope to see the
11 full breadth of it.

12 Q. That's why it's hard for us not having you as
13 the person who actually looked at the microscope to be
14 able to look back and explain what happened. Right?

15 A. No. You don't need that.

16 Q. You were not the person who sat at the
17 microscope and made the calls on these fibers and
18 bundles. Correct?

19 A. That is correct. But we've had verification
20 from outside laboratories come in and verify the
21 fibers and bundles.

22 THE COURT: How do they verify?

23 THE WITNESS: They get the TEM grid. We tell
24 them what grid openings to look at. They go and look
25 at it and say "fiber," "bundle" and that it is

1 anthophyllite or tremolite. We had an independent lab
2 do that, Lee Poye, and he found 90 percent bundles in
3 those MDL samples wherein those same samples we found
4 80.

5 MS. BROWN: This sounds like something that
6 has not been disclosed. I'm going to ask him
7 something very similar to that right now.

8 MR. BLOCK: He gave that testimony on direct
9 and the verification that was done -- and also can we
10 take a couple of minute bathroom break?

11 THE COURT: We will. You want to do it now?

12 MR. BLOCK: No. At the Court's convenience.

13 THE COURT: We will in a few minutes. I want
14 to break up the afternoon appropriately.

15 BY MS. BROWN:

16 Q. Following up, Dr. Longo, on Her Honor's
17 question, one of the things you do from time to time
18 at your MAS shop is do some reports on your analysts.
19 Correct?

20 A. Correct.

21 Q. And one of the things you commissioned in
22 September of 2018, you and Dr. Rigler, was
23 co-efficient of variation report. Right?

24 A. That is correct.

25 Q. And incidentally, Dr. Longo, Dr. Rigler is your

1 co-author on your MDL reports. Correct?

2 A. That is correct.

3 Q. And Doctor Rigler, as of late, is no longer
4 employed by MAS. Correct?

5 A. That is correct.

6 Q. And you have declined in your depositions to
7 talk about the circumstances that led to Dr. Rigler's
8 departure. Correct?

9 A. Correct. It is our company policy not to
10 discuss why people leave MAS, but I will state that.

11 Q. Dr. Rigler is getting ready to turn 65 --

12 THE COURT: He's not old.

13 A. And he's been commuting 90 miles each way for
14 30 years, and I won't tell you why he left. But I
15 will tell you the entire time Dr. Rigler, from the day
16 he started until the day he decided to leave MAS, he
17 was an outstanding employee.

18 Q. I want to talk about a report that Dr. Rigler
19 and yourself commissioned, the coefficient of
20 variation report, from September of 2018. Are you
21 with me?

22 A. I am.

23 Q. All right. This was an analysis to determine
24 the level of variation in how your analysts report
25 asbestos from one analyst to the next in the same

1 sample. Correct?

2 A. Yes and no. It was to determine how many
3 asbestos structures per grid opening that they
4 counted. It was never designed for a fiber bundle
5 coefficient variation.

6 Q. For counting asbestos structures from one
7 analyst to the next. That's what this report was
8 aimed at doing. Right?

9 A. Exactly asbestos structures.

10 Q. One of the things you know, Dr. Longo, is that
11 when your analysts report on the structures, they are
12 seeing under the TEM microscope, they fill out a count
13 sheet. Right?

14 A. That is correct.

15 Q. And you have produced a whole lot of count
16 sheets in this litigation. Correct?

17 A. That is correct.

18 Q. And count sheets -- and I think I have one here
19 -- a count sheet is something that looks like this.
20 Correct?

21 A. Yes, ma'am.

22 Q. And so when you say they are figuring out the
23 structures, this is where they would record that
24 information. Correct?

25 A. That and take a photograph.

1 Q. And so these are the types or the categories of
2 information that your analysts are recording when they
3 are looking at a microscope under TEM. Correct?

4 A. That is correct.

5 Q. So you ran this coefficient of variation
6 exercise with Dr. Rigler in 2018. Right?

7 A. Yes.

8 Q. And so to do that, what you did is you bought a
9 bottle of Johnson's Baby Powder off the shelf, and you
10 spiked it or you added to it tremolite asbestos and
11 anthophyllite asbestos. Right?

12 A. Yes.

13 Q. And you spiked it with .3 percent asbestos?

14 A. Yes.

15 Q. Orders of magnitude more that your analysts are
16 claiming to find in Johnson & Johnson's Baby Powder.
17 Right?

18 A. By TEM, that's correct.

19 Q. And you had four analysts look at the same grid
20 to analyze it for tremolite and anthophyllite
21 asbestos. Is that correct?

22 A. That's correct.

23 Q. Your analysts are trained to distinguish between
24 fibers and bundles. Correct?

25 A. Yes.

1 Q. As part of the exercises here they would have
2 filled out information about what they were seeing.
3 Correct?

4 A. Yes.

5 Q. Including whether they were seeing a bundle or
6 whether they were seeing a fiber. Right, Dr. Longo?

7 A. Per the instructions of just doing structures,
8 yes, they put that down.

9 Q. And you collected that information and put it
10 into a report. Correct?

11 A. On the counting errors, yes. But the count
12 sheets were there.

13 Q. And if we could look at the slide on the
14 findings, I want to talk to you a little bit about the
15 number of times your analysts agreed or disagreed on
16 whether what they were seeing was a fiber or whether
17 what they were seeing was a bundle. Are you with me?

18 A. Is this the tremolite or the anthophyllite one?

19 Q. This is the tremolite one. So your analysts did
20 this thing twice. Right?

21 A. One for anthophyllite and once for tremolite.

22 Q. I want to talk about their findings when they
23 did it for tremolite. Okay?

24 A. Okay.

25 Q. Those are the same four analysts who were

1 looking at the TEM samples in the MDL. Correct?

2 A. Correct.

3 Q. So these are the same four folks who back in
4 September of 2018 looked at the same TEM grid and
5 filled out individual count sheets like the one we
6 just looked at. Right?

7 A. That is correct.

8 Q. So for grid opening No. 1 on our list, AE --
9 E-2, analyst No. 1 looked at the same grid opening as
10 the other three and called it a bundle. Right?

11 A. Correct.

12 Q. Analysts 2 and 3 looked at the same exact thing
13 and called it a fiber. Right?

14 A. Yes.

15 Q. And analyst 4 was with No. 1 and called it a
16 bundle. Right?

17 A. Correct. There was 50 percent agreement on the
18 structures. 50 percent said it was a fiber and
19 50 percent said it was a bundle.

20 Q. The second time everyone agreed it was a fiber.
21 Right?

22 A. Correct.

23 Q. The third time, first three folks called it a
24 bundle but analyst 4 called it a fiber. Right?

25 A. That would be 75 percent agreement.

1 Q. And I thought I heard you on your direct
2 examination, Dr. Longo, I thought I heard you say
3 there is no right. Do you remember giving that
4 testimony?

5 A. Yes. You are not starting with a known. It is
6 an agreement between the analysts. So you can't say
7 any of them are wrong. It is their agreement. That's
8 how the National Voluntary Laboratory Accreditation
9 Program does it.

10 Q. Now, you are referring to the NVLAP standard
11 that you guys are accredited with. Right?

12 A. Yes.

13 Q. You know what that standard requires; right,
14 Dr. Longo?

15 A. 90 percent.

16 Q. It requires that every time you have a group of
17 analysts like this looking at the same thing that they
18 say they make the same call 90 percent of the time.
19 Right?

20 A. Right. I think we have talked about this in the
21 past. This test was only designed to determine the
22 counting statistics. We never asked the analysts to
23 do a fiber bundle agreement study.

24 Q. Let's go back to our list.

25 A. We have done that for NVLAP 90 percent --

1 Q. Dr. Longo, we are talking about what has been
2 produced in this case and at issue here. So I want to
3 talk about this study where, as part of recording what
4 they saw, your analysts made the call about whether
5 they were looking at a fiber or whether they were
6 looking at a bundle; and if we go down this list, you
7 can see that your analysts agreed only once. Correct?

8 A. They agreed not only once. The way you are
9 doing that is inappropriate.

10 Q. Dr. Longo, you understand that there were times
11 when three of your analysts didn't see anything at all
12 and one of them thought they saw a fiber. Do you see
13 that?

14 A. You can't compare that.

15 Q. You see there were times where three people
16 didn't see anything at all but analyst 2 saw a bundle.
17 Right?

18 A. No, this is not how you do these methods. You
19 can't say that. What you are saying is it is the
20 example I used earlier. If you had 100 analysts and
21 95 of them call it a bundle and five of them call it a
22 fiber, you would draw a red line all the way through
23 that.

24 Q. Here is the thing, Dr. Longo, the requirement is
25 90 percent agreement, and even on your chart you

1 showed on direct examination your folks were not
2 agreeing 90 percent of the time. That's true?

3 MR. BLOCK: Objection. Compound question.

4 THE COURT: If I can go back to how many
5 compound questions were asked today on both on direct
6 and on cross. So are you really getting to that now?

7 MS. BROWN: Your Honor, I'm at the end of
8 this, if this is an appropriate time for the Court, I
9 think we're done with this report.

10 THE COURT: Okay. We'll take the break now.

11 THE DEPUTY CLERK: All rise.

12 (Recess.)

13 (Continued on the next page.)

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1 THE DEPUTY CLERK: All rise.

2 THE COURT: Thank you.

3

4 **WILLIAM E. LONGO**, resumed.

5

6 CROSS-EXAMINATION

7 BY MS. BROWN: (Continued)

8 Q. Welcome back, Dr. Longo.

9 A. Thank you.

10 Q. Dr. Longo, I want to talk a little bit about
11 some of your PLM analysis in this case. Okay?

12 A. Yes.

13 Q. Prior to issuing your MDL report, you had not
14 used PLM in your initial report. Correct?

15 A. That is correct.

16 Q. And in fact you were of the opinion back then in
17 2017 and 2018 that PLM basically wasn't going to work.
18 Correct?

19 A. Using the standard method, yes, ma'am.

20 Q. You were of the opinion that PLM was not
21 appropriate for this kind of cosmetic talc analysis.
22 Correct?

23 A. That is correct.

24 Q. You testified that in your opinion PLM, which,
25 just to orient us, consists of two of the three

1 methods you are using here. Right?

2 A. That's correct, the heavy density liquid Blount
3 method and the ISO 22262-1 method.

4 Q. And so just to reorient us, Dr. Longo, you have
5 used in the MDL ISO PLM. Correct?

6 A. Yes.

7 Q. Blount PLM?

8 A. That is correct.

9 Q. And ISO TEM. Correct?

10 A. Yes, the talc method by ISO for TEM.

11 Q. Two of those methods involve the polarized light
12 microscopy method. Right?

13 A. Yes.

14 Q. Prior to the MDL you had testified in a number
15 of different places that PLM was not an appropriate
16 method for testing cosmetic talc?

17 A. That is correct.

18 Q. And you testified actually that you were of the
19 view that it could not pick up trace levels of
20 asbestos. True?

21 A. That is true.

22 Q. And so your original report on the eBay samples
23 dealt only or employed only TEM. Correct?

24 A. That is correct.

25 Q. Now, here in the MDL you are now using two PLM

1 methods. Fair enough?

2 A. That is fair, yes.

3 Q. One of those comes out of the ISO method.

4 Correct?

5 A. Correct.

6 Q. I would like to use the Elmo for a moment, if I
7 could. You put up this slide earlier today with
8 counsel for the plaintiffs. Do you remember that?

9 A. I do.

10 Q. And this slide speaks to the ISO 22262-2 method.
11 Correct?

12 A. Correct.

13 Q. And one of the things that was a little strange
14 about this slide is that the last sentence is cut off.
15 Right, Dr. Longo?

16 Do you see that?

17 A. Yes.

18 Q. You do use 22262-2, correct?

19 A. Correct.

20 Q. And this was the subject of a slide when you
21 were talking about how this is an appropriate
22 procedure and one that you employed in the MDL.
23 Correct?

24 A. That is correct.

25 Q. All right. So let's take a look, though, at the

1 actual standard, and if we can't get to the end of
2 that sentence, which begins "quantify any asbestiform
3 amphibole in the centrifuge." And so if we go to the
4 actual method, we will see near the end of that
5 sentence if we can bring it up.

6 Here is the rest of the sentence which says,
7 "...quantify any asbestiform amphibole in the
8 centrifuge by the point counting procedures specified
9 in 14.2.3." See that?

10 A. Yes.

11 Q. Point counting is not a method you employed in
12 this case. Right?

13 A. That is correct. The same method discusses
14 point counting when you have two different size
15 densities in the material such as talc and amphibole
16 asbestos. It is in this method where it specifically
17 says point counting is not recommended if you have
18 materials that have two different types of densities
19 and two different sizes because it will impart an
20 error factor. Yes, it says that. But it also says
21 not to use point counting.

22 Q. Let's go to the end of the sentence that we
23 didn't see, that you should quantify asbestiform
24 amphibole by point counting. My question was: You
25 didn't do point counting here. True?

1 A. To be fair, we didn't do point counting because
2 the method says don't do point counting when you have
3 these types of samples.

4 THE COURT: Your answer is you did not do
5 point counting?

6 THE WITNESS: That is correct, Judge.

7 Q. I want to give a little context to what we are
8 talking about here.

9 When you employed the ISO PLM method, your
10 analysts in some instances came up with a weight
11 percentage of the amphibole that they were seeing. Is
12 that correct?

13 A. That's correct.

14 Q. And in this case your analysts here recorded
15 less than .1 tremolite actinolite. Correct?

16 A. Correct.

17 Q. And to get that information, your analysts did
18 not use the point counting method. Correct?

19 A. No. They used the appropriate method but not
20 point counting.

21 Q. What you tell us in your report -- first of all,
22 your PLM analyst is Mr. Paul Hess. Correct?

23 A. Correct.

24 Q. And Mr. Hess did all of the PLM analyses in this
25 case. Correct?

1 A. Correct.

2 Q. And what Mr. Hess did -- you tell us in your
3 report -- is that for positive samples, a visual
4 estimation of the quantity of asbestos observed was
5 based on eye calibration through review of lab
6 generated weight percent standards. Correct?

7 A. Correct.

8 Q. What that means is that Mr. Hess looked at the
9 area that was supposedly covered by asbestos versus
10 the entire area and compared them against a weight
11 percent standard. Correct?

12 A. The entire of the other particulates, that's
13 correct.

14 Q. What he used, according to your report,
15 Dr. Longo, was a lab-generated weight percent
16 standard. Correct?

17 A. That is correct.

18 Q. And the "lab generated," that means something
19 produced out of your shop MAS. Correct?

20 A. Yes.

21 Q. And the way you made those weight percent
22 standards was based on spiking a sample of Johnson &
23 Johnson's Baby Powder. Right?

24 A. Correct.

25 Q. And once you spiked it, and mixed in what you or

1 someone at your lab considered to be appropriate
2 materials, you got a weight percent as your standard.
3 Correct?

4 A. Correct.

5 Q. And you, Dr. Longo, did not personally generate
6 those standards. Correct?

7 A. I did not.

8 Q. An employee of yours did that. Correct?

9 A. That is correct.

10 Q. And you did not supervise or evaluate the
11 employee who was doing that?

12 A. I don't understand the question.

13 Q. You didn't observe this employee. Ms. Victoria
14 Panarello, when she was creating these MAS weight
15 percentage standards. Correct?

16 A. That I don't recall. I'm in and out of the lab
17 quite a bit.

18 MS. BROWN: Permission to read, your Honor?

19 THE COURT: Okay.

20 Q. This is from your testimony, binder Exhibit
21 D-48. This is from your February 5, 2019 MDL
22 deposition at page 271, lines 16 to 21:

23 You were asked the question in your MDL
24 deposition 271, lines 16 to 20, as it relates to the
25 work of Ms. Panarello?

1 "QUESTION: Did you monitor her when she did
2 that?

3 "ANSWER: Did I sit here and stand there and
4 watch her? No.

5 "QUESTION: Did you monitor her in any other
6 way?

7 "ANSWER: No."

8 And you, Dr. Longo, to orient us to what's
9 being done with these MAS generated-standards, which
10 is what Mr. Hess is using when he was doing his visual
11 examination about how much asbestos he's estimating is
12 in the sample. Correct?

13 A. It is a visual estimate based on past standards,
14 based on these petrographics that show what the
15 various percentages are. So there is a couple of
16 things.

17 Q. And you know that ISO, the standard on which you
18 rely, it says that the accuracy and reproducibility of
19 those visual estimates is very limited. Correct?

20 A. That's correct.

21 Q. You know, Dr. Longo, that you did not include,
22 in connection with your MDL report, the weight
23 standards that an employee of MAS created. Correct?

24 A. That's correct.

25 Q. And so either the MAS employee who created the

1 standard nor the MAS employee who used the standard
2 have provided testimony in the MDL. Correct?

3 A. That is correct.

4 Q. You didn't include any information, Dr. Longo,
5 in your MDL report and supporting materials that would
6 allow someone else to replicate or figure out the work
7 that your employees did in coming up with the weight
8 percentages under PLM. Correct?

9 A. No, that's not quite fair. The experts for
10 Johnson & Johnson have splits of every one of these
11 samples. They have the ability to follow the
12 protocol. They have the ability to do the ISO
13 22262-2. They have the ability to do the heavy liquid
14 density separation. They did PLM. They have been in
15 our lab and done TEM and verified these analyses.
16 That's not fair to say there is no way to reproduce --

17 THE COURT: She's asking a very specific
18 question about taking out the weight percentages.
19 Where does that appear so someone could replicate.
20 That was the focus of the question. Can you answer
21 that question now.

22 Do you want to ask it again.

23 MS. BROWN: Yes, your Honor.

24 Q. To follow up on the Judge's question, and what I
25 was after, Dr. Longo: This process that was done at

1 MAS used MAS-created weight percent standards.

2 Correct?

3 A. Correct. You want to know what those weight
4 percent standards are?

5 Q. No. I have a different question. You did not
6 include those MAS weight percent standards in the
7 materials you produced in the MDL. Correct?

8 A. The actual samples themselves?

9 Q. The standards, Dr. Longo, the standard that your
10 employee used to estimate how much asbestos he thought
11 was in a sample he was looking at under PLM; you did
12 not produce those. Correct?

13 A. I'm just trying to understand. Produce the
14 actual spiked talcum powder sample with the asbestos
15 in it?

16 Q. Dr. Longo, you did not include in your MDL
17 report any information concerning the data that was
18 generated in your lab in creating these weight percent
19 standards against which Mr. Hess compares the sample
20 to determine how much asbestos he thinks is in
21 Johnson's Baby Powder?

22 A. Now I understand. I did not produce that data.

23 Q. Dr. Longo, we can agree one of the cornerstones
24 of the scientific method is that results are capable
25 of validation. Fair?

1 A. That's fair.

2 Q. And validation is often described in terms of
3 producing results that are both repeatable and
4 produceable. Correct?

5 A. That is correct.

6 Q. And one of the things you did here as part of
7 your work was to send some of the samples that your
8 analyst tested to another lab. Correct?

9 A. Yes.

10 Q. And that's the J-3 lab that Mr. Poye works at.
11 Correct?

12 A. Correct.

13 Q. And you have known Mr. Poye for a long time.
14 Correct?

15 A. A few years.

16 Q. And you believe J-3 is a very good lab.
17 Correct?

18 A. I do.

19 Q. In fact, it was you who selected Mr. Poye and
20 recommended Mr. Poye as someone you could send your
21 samples to in this context. Correct?

22 A. That's correct.

23 Q. And so what happened here is that in June of
24 2018 you sent 79 samples to Mr. Poye for testing by
25 X-ray diffraction as well as polarized light

1 microscopy or PLM. Correct?

2 A. That is correct.

3 Q. And you instructed Mr. Poye at J-3 to use the
4 ISO PLM method. Correct?

5 A. Correct.

6 Q. Now, Mr. Poye had done this exercise of
7 verification of your work in the past. Correct?

8 A. Only the TEM. We had sent previous samples to
9 him for the R-93 and the XRD, but we had not performed
10 any R-93. So there was no verification in, I guess
11 I'll call, the initial samples.

12 Q. In the initial eBay report you had also sent
13 some of your work to Mr. Poye for testing. Correct?

14 A. That's correct.

15 Q. And Mr. Poye employed a test called the EPA R-93
16 test. Correct?

17 A. Yes, ma'am.

18 Q. That is not a method that you used here. Right?

19 A. No.

20 Q. And in the MDL, when you sent the MDL samples to
21 Mr. Poye, you told him to use a method other than the
22 R-93. Correct?

23 A. That is correct.

24 Q. You told him to use the ISO method. Correct?

25 A. Correct, since the ISO 22262-1 and 2

1 specifically talks about talc and cosmetic talc. It
2 is the only method out there that specifically has
3 cosmetic talc in it. That's why that method is
4 chosen.

5 Q. And, ultimately, Dr. Longo, Mr. Poye tested 22
6 of the same samples that your analyst at MAS had
7 tested by ISO PLM. Correct?

8 A. Yes, ma'am.

9 Q. What that means is we had your lab and
10 Mr. Poye's lab running the same method on the same 22
11 samples. Correct?

12 A. Not really.

13 Q. Let me rephrase, Dr. Longo. You told Mr. Poye
14 to use the ISO PLM method. Correct?

15 A. Correct.

16 Q. And you sent him samples from the samples that
17 your shop had tested. Correct?

18 A. That is correct.

19 Q. And the reason, as evidenced in your report,
20 that you did that was as part of a verification
21 exercise. Correct?

22 A. That is correct.

23 Q. And the title of the report is in fact
24 "Verification." Correct?

25 A. Can I see the report?

1 Q. Sure. We'll get that right away.

2 While I get that, Dr. Longo, the 22 samples
3 that you sent to Mr. Poye, your lab had found asbestos
4 in eight of them. Correct?

5 A. That is correct.

6 Q. And when you sent them to Mr. Poye, however, his
7 lab did not detect asbestos in any of them. Correct?

8 A. That is correct.

9 Q. And he was using the same method, right?

10 And you, in fact, contained the results of
11 Mr. Poye's ISO PLM in your February 2019 report.
12 Correct?

13 A. That is correct. We are both using the ISO
14 22262-1, but the amount of work going into -- in
15 particular analysis is different.

16 Q. I want to talk about that.

17 Before we talk about some information that you
18 have learned recently, I want to make sure we are
19 clear. The same test methods were used by both your
20 shop and Lee Poye's shop. Right?

21 A. It is the same test method, but it is a
22 different level of examination that we are using
23 versus Lee Poye. It is not really fair to compare the
24 two.

25 Q. When you sent the samples to Mr. Poye, you asked

1 him to employ the ISO PLM method. Correct?

2 A. Correct.

3 Q. And you didn't give him any other additional
4 instructions about how long he should spend analyzing
5 the samples. Correct?

6 A. No.

7 Q. And the ISO PLM method itself does not contain
8 any restrictions or guidance or limitations about how
9 long a microscopist should spend on a sample?

10 A. That's correct.

11 Q. When you sent the samples to Mr. Poye, you did
12 not instruct him to use a particular piece of
13 equipment or a particular lens on his equipment when
14 he was analyzing these samples. Correct?

15 A. No. We asked him just to use the ISO 22262-1
16 method. However, we have a high resolution camera.
17 You can see some of the photographs we have up there,
18 how good the resolution is on a high definition
19 screen. We have a different objective lens that takes
20 out -- corrects the aberrations, and our analyst is
21 not given any time that they have to complete a
22 sample. Paul Hess may have spent two to six hours on
23 an individual sample. I agree they are both the same
24 method, but the level of analysis between the two is
25 different.

1 Q. Let's break those down, Dr. Longo.

2 One of the reasons that you have come to
3 believe would explain the fact that your lab found
4 asbestos in eight of the samples, and Mr. Poye's lab
5 did not, is a high resolution camera. Is that what
6 you said?

7 A. Not the only thing.

8 Q. His resolution camera is one of the reasons you
9 have come to believe may explain the separate results.
10 Is that right?

11 A. A high resolution camera that is essentially a
12 video camera, that is in realtime that he can examine
13 the sample looking at a high definition monitor as he
14 is moving the stage and the dispersion staining.

15 Q. As it relates to the high resolution camera,
16 your shop in Georgia installed that camera
17 specifically for analyzing talc for asbestos; didn't
18 you?

19 A. We did.

20 Q. And all of the work your shop has done analyzing
21 contaminate for asbestos has been done in the context
22 of litigation. Correct?

23 A. That is correct.

24 Q. One of the things you testified, these results
25 from Lee Poye's testing were made available to you in

1 July of 2018. Do you recall that?

2 A. I think that is when we got the report back.

3 Q. For a number of months following that you were
4 asked questions, What do you think explain these
5 different results? Do you remember that?

6 A. I do.

7 Q. All the way through your deposition in the MDL
8 you remained unsure of what might explain the
9 difference. Right?

10 A. Correct.

11 Q. And one of the things you posited in some of
12 your depositions over that period of time was, Well,
13 one thing we could do is send these samples to an
14 independent third-party and have it checked out,
15 right?

16 A. I don't believe I said that, is to have not a
17 third-party but take the standards and get together
18 with Lee Poye's group and see how it is different.

19 Q. You also testified, did you not, that one of the
20 things you could do is have another lab check out the
21 inconsistencies. Right?

22 A. I don't recall that. But that's possible.

23 Q. Is it fair to say, sitting here today,
24 Dr. Longo, you have not sent those samples that we are
25 discussing out to another lab? Correct?

1 A. I have not, no. The samples, of course, went to
2 the RJ Lee group.

3 Q. And one of the things that has happened since
4 your deposition in the MDL is that you have had a
5 telephone conversation with Mr. Poye. Correct?

6 A. Correct.

7 Q. And it was you who initiated the telephone
8 conversation. Correct?

9 A. Correct.

10 Q. And you called Mr. Poye to explore the reason
11 that your analysts had eight positive samples where
12 the J-3 lab had none. Correct?

13 A. Correct. I wanted to see if there was anything
14 we were doing differently using a basic polarized
15 light microscope and using the same method.

16 Q. And since that time you have satisfied yourself
17 that you have identified the reasons for the
18 differences between your shop's findings and
19 Mr. Poye's findings. Correct?

20 A. It is an explanation. We should do some round
21 robins and get things in line, but it is an
22 explanation of the difference.

23 Q. And your current working explanation for why
24 your shop reached a different conclusion than
25 Mr. Poye's shop has to do in part with the high

1 resolution camera we were just discussing. Right?

2 A. It is everything. I can't say the high
3 resolution camera does anything different but probably
4 has more to do with the aberration corrected optical
5 lens, the lens on that, and the time that goes into
6 it.

7 Q. The other thing, Dr. Longo, that you just
8 identified and which you mentioned a little earlier is
9 the time that your analysts are spending on these
10 samples versus the time Mr. Poye's folks are spending.
11 Is that right?

12 A. According to Mr. Poye they didn't spend that
13 much time on it.

14 Q. I believe it is your understanding, though, that
15 Mr. Hess who does the PLM for the MDL -- correct?

16 A. Correct.

17 Q. Your understanding is that Mr. Hess spends about
18 two to six hours per sample. Right?

19 A. Depending on what's in the sample, yes.

20 Q. And your understanding is that Mr. Poye's
21 analysts do not spend as long. Correct?

22 A. For PLM analysis, that's what he stated to me.

23 Q. And having spoken to Mr. Poye and come to the
24 understanding that a combination between a lens or the
25 equipment and the time the analyst spent, you have

1 become satisfied, you have come to understand the
2 differences in the results of your lab and Mr. Poye's
3 lab. Correct?

4 A. It is an explanation. I'll be satisfied when we
5 can come to the same conclusion with spiked samples;
6 it is an explanation on the differences for eight out
7 of the 22.

8 Q. And one of the things that Mr. Hess does when he
9 examines a sample under PLM is to fill out a count
10 sheet or some kind of a report about what he is
11 seeing. Right?

12 A. Correct.

13 Q. And we looked at some of those this morning, but
14 the report contains basic information, does it not,
15 about who is doing the analysis and when they are
16 doing it and what they are finding. Correct?

17 A. Correct.

18 Q. And you, of course, have produced all of those
19 reports for us here today, and you reviewed them in
20 advance of your testimony. Right?

21 A. I didn't look through the PLMs. Hopefully, they
22 are all there.

23 Q. One of the things that is contained in the
24 documentation of the samples that Mr. Hess reviewed
25 are the dates on which he reviewed the samples.

1 Correct?

2 A. Correct.

3 Q. And so if we go back and we look at some of
4 these PLMs, we can see, for example, how many samples
5 Mr. Hess analyzed on, for example, December 13th,
6 2018. Correct?

7 A. That is correct.

8 Q. And so if we could go to the slide that starts
9 out "this analysis" -- and we have a smaller version
10 of the document, if it would be easier for you -- we
11 can see that on December 13th Mr. Hess -- I'll put one
12 up on the ELMO so we can orient ourselves here. This
13 is the documentation of Mr. Hess's work at your shop.
14 Correct?

15 A. It is.

16 Q. And so some of these issues from his PLM
17 analysis in December 13th of 2018 -- the client here
18 is the Beasley Allen law firm, and this is the result
19 of his findings. Correct?

20 A. Correct.

21 Q. One of the things that you could do is go
22 through all of these and figure out what Mr. Hess --
23 what samples Mr. Hess reviewed on which days.
24 Correct?

25 A. That's correct.

1 Q. By doing that, Dr. Longo, you can figure out in
2 fact how long it took Mr. Hess to review some of these
3 samples. Fair enough?

4 A. That's fair enough.

5 Q. So let's take, for example, December 13th of
6 2018, and we can go back to the slide, and I'll
7 represent to you, Dr. Longo, we have a packet of the
8 PLM analysis that Mr. Hess did on December 13th, 2018.
9 So we have sample 69757 he analyzed by PLM on that
10 day.

11 If you pull all of the sample PLM sheets from
12 December 13th we can see how much work Mr. Hess did on
13 that day. Here we have the number of samples that
14 were analyzed by Mr. Hess just on December 13, 2018.
15 Is that right. Dr. Longo?

16 A. If those dates are correct, that is right.

17 Q. 13 samples Mr. Hess analyzed on December 13th,
18 2018. Right?

19 A. If those are the dates, yes. Yes.

20 Q. That would mean he spent 78 hours on
21 December 13th, 2018, analyzing PLM samples if in fact
22 he spent six hours a sample. True?

23 A. No, of course not. He wouldn't have been
24 spending six hours on those.

25 Q. I'm sorry. Dr. Longo?

1 A. Of course not, in the same day he would not be
2 spending six hours on the sample.

3 Q. Even if he spent on the low end of your
4 estimation there, Dr. Longo, as it relates to the
5 inconsistencies of Mr. Poye's lab, even if what
6 Mr. Hess did on December 13th was spend only two hours
7 a sample, he would have worked 26 hours on
8 December 13, 2018?

9 A. If each sample took two hours, that is correct.

10 Q. And that's your working estimation how long
11 these samples would take and understanding why you and
12 Mr. Poye have reached different conclusions. Correct?

13 A. This is one of the factors that my analysts we
14 keep track at times. It's the lens, it's the camera,
15 et cetera. But they do get samples they spend a long
16 period on.

17 Q. We know even on just the very next day,
18 December 14th, Mr. Hess was real busy again; wasn't
19 he? It looks like Mr. Hess again analyzed 13 or 14
20 samples the very next day?

21 A. That is correct.

22 Q. And there are other days contained in the
23 documents you produced where you can put together the
24 amount of time that any of your individual analysts
25 spent on these PLM samples. Right?

1 A. That is correct.

2 Q. And the truth is, Dr. Longo, you have not done
3 an analysis of how much time each of -- how much time
4 Mr. Hess could have spent on any individual PLM
5 sample, particularly the ones that were sent to
6 Mr. Poye. Is that right?

7 A. Not to this degree, no. This is going from what
8 the manager and the analyst said.

9 Q. And you have not, as it relates to the samples
10 that your shop determined were positive and Mr. Poye's
11 shop determined were negative, you have not done an
12 analysis of whether or not the lens that you have on
13 your microscope in any way affected those results.
14 Correct?

15 A. No, that's not true. It does affect those
16 results because that lens gives you much higher
17 resolution to be able to see the single fibers inside
18 the bundles which is the primary determination if it
19 is asbestiform or greater than 20-to-1. It absolutely
20 does.

21 Q. But what you have not done, Dr. Longo, you have
22 not tried to determine whether amphibole particles can
23 be identified by ISO PLM without using the special HD
24 lens or equipment that you just mentioned. Correct?

25 A. We have used the old lens in the past, but it

1 gives you higher resolution. It absolutely helps.

2 Q. And you testified you don't know if it makes a
3 difference. Do you remember that?

4 A. I don't remember quite that, but it absolutely
5 makes a difference. The ability to see those single
6 fibers in those bundles to distinguish it for 20-to-1
7 or greater, it absolutely does in conjunction with the
8 high resolution camera, in conjunction with the high
9 resolution monitor.

10 Q. What you testified to, Dr. Longo, in March of
11 2019 is that you have not tried to figure out whether
12 there would be a difference in the analysis if the HD
13 lens was used or if it was not used. Correct?

14 A. That is correct, in March.

15 Q. And you have not gone back to all of the count
16 sheets to try and figure out if there would be a
17 difference between the time your analyst spent and the
18 time the analysts in Mr. Poye's shop spent. True?

19 A. That is true.

20 Q. And you have not, as of this date, sent those
21 samples out for a round robin blind sampling to figure
22 out why your shop found eight suspected detects and
23 Mr. Poye's shop found none?

24 A. I have looked into that. I think a better
25 avenue here is to get the analysts together. It is

1 not clear who we send out to round robins. Most all
2 the labs are not doing it to this degree, but we'll
3 get there at some point where we get the two analysts
4 together so they could sit down at the microscopes
5 together and work out why one saw positive on eight
6 samples by ISO and one has not.

7 THE COURT: How long has it been since you
8 were aware there was a difference in what the labs
9 found?

10 THE WITNESS: When we put this report
11 together.

12 THE COURT: Which was?

13 THE WITNESS: The MDL report.

14 THE COURT: The date?

15 THE WITNESS: I think the first one we issued
16 was in November or January.

17 Q. Do you recall the analysis from Mr. Poye as
18 contained in your own report was made available to you
19 in July of 2018? Correct?

20 A. Correct.

21 THE COURT: The reason for my question is some
22 point we'll get together. It has been a year. You
23 haven't done it. You don't have an answer as to the
24 differences because you haven't had that sitdown.

25 THE WITNESS: I have an answer because of the

1 optics, because of the high definition camera, and Lee
2 Poye's lab does not have that. To actually sit the
3 analysts down, we have not done that.

4 THE COURT: But that has not been done.
5 Correct?

6 THE WITNESS: No, that has not been done.

7 THE COURT: Thank you.

8 MS. BROWN: I have no further questions.
9 Thank you.

10

11 REDIRECT EXAMINATION

12 BY MR. BLOCK:

13 Q. Dr. Longo, I want to try to be more specific
14 about the last 20 minutes or so questioning regarding
15 Lee Poye, the microscopists in his lab J-3, and what
16 tests you were talking about with Johnson & Johnson's
17 lawyer. Okay?

18 A. Yes.

19 Q. Now, with respect to what was being referred to
20 as ISO PLM, was that testing involving polarized light
21 microscopy without heavy liquid separation?

22 A. Correct.

23 Q. So polarized light microscopy without heavy
24 liquid separation. In those questions and answers we
25 just heard when Johnson & Johnson's lawyers were

1 referring to ISO PLM, was that referring to polarized
2 light microscopy without heavy liquid separation?

3 A. Yes.

4 Q. Is doing polarized light microscopy without
5 doing heavy liquid separation a sensitive method for
6 detecting asbestos in talc?

7 A. No, it is not as sensitive, when you use the
8 heavy liquid separation.

9 Q. Why is that?

10 A. Because it is just like the TEM analysis you are
11 concentrating the heavy amphiboles. So you are
12 removing all the talc. It is essentially the Blount
13 method published in 1991.

14 Q. And when J-3 Lab did the polarized light
15 microscopy without first doing the heavy liquid
16 separation, it was called ISO PLM. In the
17 questioning, the J-3 lab did not detect asbestos. It
18 was not detected?

19 A. That's correct.

20 Q. Whereas, your lab for that specific analysis,
21 polarized light microscopy without heavy liquid
22 separation, found asbestos in what percentage of the
23 samples approximately?

24 A. 30 percent.

25 Q. So J-3 versus MAS, 30 percent.

1 Now, could we go to the ELMO, please.

2 So the discussion regarding the discrepancies
3 in the ISO PLM that was being discussed in the last 20
4 or so minutes of your cross-examination related to PLM
5 without heavy liquid separation. Is that true?

6 A. That is true.

7 Q. Let's look at what ISO says about what type of
8 microscope should be used if heavy liquid separation
9 is not used. Are we looking at that chart in 2262
10 that we mentioned earlier?

11 A. Yes, we are.

12 Q. Let's read it closely. It says:

13 "For amphibole either centrifugation and heavy
14 liquid followed by evaluation of the centrifuge by
15 microscopy."

16 Do you see that?

17 A. Yes.

18 Q. If you do heavy liquid, before you analyze under
19 the microscope, does it say you can use the PLM
20 microscope, the TEM microscope, or an SEM microscope?

21 A. Correct.

22 Q. Then it says:

23 "Or preparation of TEM specimens from the
24 untreated material is the optimum procedure followed
25 by X-ray diffraction using the mass counting

1 procedures."

2 Do you see that?

3 A. I do.

4 Q. Does ISO 22262 specifically say here it's not an
5 optimum procedure to use polarized light microscopy
6 without first doing heavy liquid separation?

7 A. That is correct.

8 Q. So all of the questions and answers about the
9 inconsistencies between your lab and J-3 regarding
10 so-called ISO PLM had to do with PLM that was done
11 without first doing heavy liquid separation. Is that
12 correct?

13 A. That is correct.

14 Q. Now, J-3 -- and that is not viewed as an optimum
15 procedure by ISO. Correct?

16 A. That's what it states, yes.

17 Q. Would you expect your lab or any lab to be
18 effective in detecting asbestos in talc using that
19 method in terms of detecting it at the same rate it
20 would detect it if it first used heavy liquid
21 separation?

22 A. No. The heavy liquid separation increases the
23 sensitivity and increases the ability to see at lower
24 concentrations.

25 THE COURT: Didn't you direct them to only do

1 this? You told them what to do, and this was the only
2 testing. You never suggested to them that they do the
3 heavy liquid. Correct? So you dictated the way it
4 would be done. Wasn't that your testimony? Did I
5 mishear?

6 THE WITNESS: To J-3?

7 THE COURT: Yes.

8 THE WITNESS: I told them to do the ISO PLM
9 method. I didn't tell them to do the heavy liquid
10 density.

11 THE COURT: Exactly.

12 MR. BLOCK: I want to follow up on that, your
13 Honor.

14 BY MR. BLOCK:

15 Q. Was the purpose of that to compare the
16 effectiveness of using polarized light microscopy to
17 detect asbestos in J&J's talc with and without heavy
18 liquid separation?

19 THE COURT: You could have done that in-house
20 -- I'm sorry. He said he sent it out to J-3 to
21 confirm results and get an independent lab looking at
22 them. And then you will think to replicate the same
23 test, not to say how it would be different if we don't
24 do this. That would be in-house. Didn't you say you
25 sent it out for confirmation? Wasn't that your

1 purpose?

2 THE WITNESS: I sent it out for doing ISO PLM.
3 Mainly, I sent it out for XRD, which we don't do
4 in-house.

5 BY MR. BLOCK:

6 Q. Is XRD a sensitive method for detecting asbestos
7 in cosmetic talc?

8 A. It cannot detect asbestos in cosmetic talc. It
9 can only detect that there is a mineral present that
10 is either tremolite anthophyllite or chrysotile but
11 only at very high concentrations as compared to the
12 other methods.

13 Q. Let me show you what will be Plaintiffs'
14 Exhibit 4, which is a document from appendix A of your
15 reliance materials at No. 18.

16 MR. BLOCK: We'll call this Exhibit 4.

17 Q. Dr. Longo, are you familiar with Plaintiffs'
18 Exhibit 4?

19 A. Yes, sir, I am.

20 Q. What is it?

21 A. That's called the stimuli to the revision
22 process, and it is to revise the USP talc method that
23 currently is what is used, as stated by the FDA, to
24 determine if there was asbestos in cosmetic talc.

25 Q. Was this document done in response to a request

1 from the U.S. FDA to look at modernizing the USP talc
2 monograph?

3 A. Correct.

4 Q. And Johnson & Johnson said that you don't use
5 the USP method when you test for talc. Do you recall
6 that?

7 A. I do recall it.

8 Q. Does this document identify the deficiencies in
9 the USP talc method?

10 A. Yes, sir, it does.

11 Q. And under the USP talc method, if we look at
12 what the document says, it says:

13 "This underscores the need to modernize the
14 current monograph for two reasons."

15 What is the IR and XRD method which is this
16 USP monograph testing method?"

17 A. It stands for infrared analysis, which is not
18 accepted by any government agency -- EPA, OSHA,
19 et cetera -- to determine asbestos in bulk samples.
20 And X-ray diffraction.

21 Q. So under this USP talc method, if the talc is
22 tested according to this method, is IR or XRD the
23 method that is used?

24 A. Yes.

25 Q. And if the test comes up as nondetected, is the

1 test over? Is that it?

2 A. Yes, it is.

3 Q. Here it says that both the IRD and XRD have
4 relatively high detection limits for asbestos. Do you
5 see that?

6 A. Yes.

7 Q. Is that why you have not used that method to
8 test Johnson & Johnson's talc for asbestos?

9 A. Well, we did use XRD, just to see how it
10 compared to the polarized light microscopy, the heavy
11 liquid separation, and TEM; and for all the samples
12 where XRD was run in the MDL, for Italian and Vermont
13 they were all negative.

14 Q. Is that what you will expect based upon your
15 review of the published literature, based upon your
16 review of this stimuli document from 2004, and based
17 upon the detection limits of the IR and XRD, that
18 makes up the USP, is that what you will expect under
19 the USP XRD method, that you would not detect asbestos
20 in cosmetic talc?

21 A. It has to be a very high concentration of
22 asbestos to be in the cosmetic talc by XRD to be
23 positive. The modern day equipment can get down to
24 about .2, .1 percent. That's about it for XRD. So I
25 would not recommend the use of it at all. And then if

1 it is positive, you have to go and do polarized light
2 microscopy. So why not, if you are going to use
3 polarized light microscopy and TEM, why not just start
4 off with that.

5 Q. So in terms of your work and the work of the J-3
6 lab, did both labs look at Johnson & Johnson's talc
7 samples using TEM with heavy liquid separation?

8 A. Yes.

9 Q. Is that one of the methods that is considered an
10 optimum method under the ISO 22262 that we looked at?

11 A. Yes.

12 Q. Can you describe the level of consistency in
13 terms of the results when MAS looked at Johnson &
14 Johnson's talc products with one of the optimum
15 methods TEM with heavy liquid separation and when J-3
16 used that same methodology?

17 A. Yes.

18 Q. What was the level of consistency? Can you
19 generally summarize it?

20 A. We had about the same percentages of positives.
21 In the 68, 69, to 70 percent range.

22 Q. And we looked at earlier that when J-3 looked at
23 22 asbestos structures from MAS, they verified 22 --
24 verified 20. Correct?

25 A. They verified 20, and they verified the amount

1 of bundles percentage-wise that we found.

2 Q. Is that greater than 90 percent in terms of the
3 verification of the asbestos structures that MAS
4 found?

5 A. Yes.

6 Q. Then MAS verified asbestos in 9 out of the 11
7 samples that J-3 found asbestos in. Is that correct?

8 A. That is correct.

9 Q. And one of them the grid opening was blown out.
10 Is that correct?

11 A. That is correct.

12 Q. And is that something that can happen or that's
13 a common problem if multiple labs are looking at grid
14 openings?

15 A. That is correct.

16 Q. So when the optimum method was used, one that is
17 recommended by ISO as having better sensitivity, were
18 the results between MAS and J-3 consistent in terms of
19 the asbestos in Johnson & Johnson's talc?

20 A. Yes.

21 Q. And would you recommend, Dr. Longo, the use of
22 polarized light microscopy without heavy liquid
23 separation based upon the testing that your lab did
24 and the testing the J-3 lab did?

25 A. No. I actually think you have to do -- you have

1 to get the equipment -- you have to get, I believe,
2 the right objective lenses. But I believe you should
3 do all three because you are looking for a needle in a
4 haystack, and, also, if you have just chrysotile
5 asbestos at a high enough concentration, you may be
6 able to see it by PLM without heavy liquid density. I
7 think the best characterization of these samples is
8 ISO 22262-1 PLM, the heavy density liquid PLM and TEM.
9 XRD I don't see any utility in.

10 Q. Does the use of heavy liquid separation prior to
11 analysis by the polarized light microscope or the TEM
12 microscope produce the most sensitive and reliable
13 analysis for detecting asbestos in talc?

14 A. Yes, it does.

15 Q. Would that be the method that's recommended by
16 ISO, and that's consistent with Dr. Blount's published
17 peer-reviewed study?

18 A. That is correct.

19 THE COURT: Go back to my question, because
20 you really haven't answered it. I'm still at a loss
21 why you even sent these samples to J-3, particularly
22 when you just said without the heavy liquid
23 separation, unless there is heavy concentration of the
24 asbestos, you are not going to see it without the
25 separation.

1 You already knew from your testing you were
2 having trace evidence. You knew they weren't going to
3 get anything. What was the purpose sending it to this
4 lab? I don't understand you haven't answered it.

5 THE WITNESS: We are going to publish this,
6 and I think it is good to compare all the different
7 methods.

8 THE COURT: You could have used that method in
9 your own lab to determine that. You said you did this
10 for purposes of some confirmation of an independent
11 lab doing it. This independent lab did nothing to add
12 to the inquiry. I think you are changing why you are
13 saying you are doing it.

14 THE WITNESS: We sent these samples off to
15 have XRD.

16 THE COURT: Not these samples, the earlier
17 samples were not the latest ones. You sent earlier
18 ones out, not these.

19 Q. Dr. Longo, the samples that were sent to J --

20 A. Was in July.

21 THE COURT: Looking at the testimony, I got
22 there were some other earlier samples. Were these
23 later samples sent for XRD?

24 THE WITNESS: Yes.

25 MS. BROWN: All of the MDL samples were sent

1 to J-3 for XRD. They were all nondetect. There was a
2 subset that were also sent for ISO PLM --

3 THE WITNESS: No. That's not correct.

4 Q. Dr. Longo, what is your understanding of that?

5 MR. BLOCK: Your Honor, we can supplement once
6 we've all looked into that issue.

7 THE COURT: I would like to get his answers
8 today. He's given a report. He's been deposed. He
9 is here today. Now is his day for him to tell the
10 story.

11 MR. BLOCK:

12 Q. Dr. Longo, what is your understanding in terms
13 of the samples that were sent to J-3 for PLM analysis?
14 Is it your understanding those were MDL samples?

15 A. There were 79 MDL samples before we even chose
16 which ones we were going to do for TEM. We had the
17 initial batch of 79. I sent them all to J-3 and said
18 do XRD and do ISO 22262. We had not started doing the
19 ISO because you see all our analyses in December.

20 The next 22 were ones that came in but we only
21 sent them for XRD. Then there was another set of two
22 samples we only sent for XRD since we were doing the
23 other analysis in-house. The XRD is what we don't
24 have. So we didn't send them out again after we
25 analyzed ourselves on additional samples.

1 MS. BROWN: If it is helpful to the Court,
2 Dr. Longo's report from February 1st, 2019, at page 49
3 of 56 gives the results of the J-3 XRD and PLM
4 analysis.

5 THE COURT: I only have the January 1st on the
6 bench.

7 MS. BROWN: It is our Exhibit D-1, and that
8 would be in the exhibit binder from my exam.

9 (Pause.)

10 THE COURT: Go ahead.

11 Q. Dr. Longo, I want to get back to the methods
12 that your lab used and some of the questions that you
13 were asked about the published methods. Okay?

14 A. Okay.

15 Q. Let's look at, if we can, look at the ELMO.

16 Dr. Longo, we looked earlier at the three
17 steps to do the TEM analysis to determine if there is
18 asbestos present. Do you recall that?

19 A. Yes.

20 Q. And the three steps we outlined earlier were the
21 morphology, and we have the morphology listed here of
22 greater than 5-to-1 aspect ratio or equal to, greater,
23 or equal to 0.5 microns in length and substantially
24 parallel sides. Do you recall that?

25 A. Yes, sir.

1 Q. And when we went through the EDXA part, the
2 standard methods for identifying asbestos in talc, you
3 told us about determining the mineral chemistry and
4 comparing the EDXA spectra with a reference standard.
5 Do you recall that?

6 A. Yes.

7 Q. You told us earlier about the third step being
8 SAED looking at the crystalline structure, comparing
9 the SAED pattern with reference standards, making the
10 determination of asbestos based upon those three
11 steps. Do you recall that?

12 A. Yes, sir.

13 Q. Now, on cross-examination you were asked about
14 whether you determine how the asbestos grew or how the
15 asbestos formed in nature, the growth habit.

16 Is there anything in the standard three-step
17 TEM method that has a test method to determine the
18 growth habit or calls for the determination of the
19 growth habit?

20 A. No. As a mineralogist or a materials scientist,
21 you can say it grew in a crystalline habit; and if it
22 is fibrous, like asbestos, you could say it is
23 fibrous, and then meets the definition. There is no
24 way to trace back to a growth habit and say this came
25 from that growth habit.

1 Q. When you published in the peer-reviewed
2 literature studies identifying asbestos, did you ever
3 hear back from the peer reviewers that you missed a
4 step, that you failed to determine the growth habit?

5 A. No.

6 Q. Is there anything in the three-step TEM test
7 methods set forth in ISO, set forth in EPA AHERA, set
8 forth in ASTM 5755 -- you asked about the tensile
9 strength. Is there even a test for that in the
10 generally-accepted methods for TEM microscopy?

11 A. No, it's impossible. It's something that cannot
12 be done.

13 Q. Same thing for flexibility. You were asked, Dr.
14 Longo, Didn't you determine the flexibility of the
15 asbestos to make sure it was asbestiform? Is there
16 anything in the generally-accepted three step TEM test
17 methodology that calls for determination of the
18 flexibility of the asbestos structure that is found?

19 A. In TEM analysis you cannot manipulate a
20 microscopic fiber. It is impossible. It is
21 impossible to determine the tensile strength in TEM or
22 even an optical microscope, and they don't even tell
23 you what high tensile strength means, how high, how
24 low.

25 Q. You were asked whether you counted particles

1 that were less than a 5-to-1 aspect ratio and why you
2 didn't do that. Do the generally-recognized test
3 methods require you to count the particles as asbestos
4 that meet the morphology requirement, that meet the
5 EDXA requirement, and meet the SAED requirement?

6 A. No. You are only required to count them that
7 are greater than, equal to 5-to-1 aspect ratio.

8 Q. When you were asked, Well, Dr. Longo, you did
9 not count particles that were less than a 5-to-1
10 aspect ratio; is that following the method?

11 A. It is not following the method, but extra work
12 in previous not MDL samples, we did count everything
13 greater than or equal to 5-to-1 aspect ratio as well
14 as went back and counted everything less than 5-to-1
15 aspect ratio.

16 Q. But in order to identify an asbestos particle as
17 asbestos, if the three steps in the TEM method are
18 satisfied, the morphology, the EDXA and the SAED is
19 that asbestos under EPA AHERA?

20 A. Yes.

21 Q. When you identified asbestos in Johnson &
22 Johnson's talc applying the generally-accepted
23 requirements by TEM for morphology EDXA and SAED, is
24 that asbestos under EPA AHERA?

25 A. Yes.

1 Q. Is that asbestos under ASTM 5755?

2 A. Yes.

3 Q. Is that asbestos under ISO 22262-2?

4 A. Yes.

5 Q. Is that asbestos under Johnson & Johnson's own
6 TEM method, TM 7024?

7 A. Yes.

8 Q. And you were shown a definition of asbestos, I
9 think from the EPA, but did you also apply the EPA's
10 rules on what is non-asbestos?

11 A. Yes, we did.

12 Q. Is any of the asbestos that you identified in
13 J&J's talc non-asbestos, meaning, quote, incomplete or
14 unobtainable electron diffraction patterns, a
15 non-asbestos EDXA or a non-asbestos morphology, did
16 any of the asbestos you identified in Johnson &
17 Johnson's talc qualify as non-asbestos based on the
18 EPA AHERA generally-accepted test method?

19 A. No.

20 Q. You were asked about your lab analysts. And
21 were the lab analysts at MAS required to follow the
22 generally-accepted test methods for TEM and polarized
23 light microscopy that you have described here to the
24 Court?

25 A. Yes.

1 Q. And is one of the ways that you are able to rely
2 upon the work of your lab analysts the training they
3 received, as you described earlier?

4 A. Correct.

5 Q. Is another way to determine the reliability of
6 the work of your analysts the supervision they get at
7 MAS?

8 A. Correct, the quality control, the co-efficient
9 variation for error rates, the continuous look in
10 seeing how they do.

11 Q. Dr. Longo, when you submitted this report for
12 the MDL with your name on it, what did you do to
13 assure that the data was reliable in terms of all the
14 backup data, all the count sheets, all the images, and
15 all the work done by your trained analysts?

16 A. To go through it and review it, have others
17 review it, have questions, sit down with the analysts.
18 So I've spent a lot of time with it.

19 Q. Are you aware of the work of the RJ Lee Group
20 who have tested the MDL samples for Johnson & Johnson?

21 A. I am.

22 MS. BROWN: Your Honor, I object to this as
23 not being at issue. There is no report from RJ Lee in
24 this case regarding MDL samples. It is not disclosed.
25 So I don't know what he is talking about.

1 THE COURT: Let's move on.

2 BY MR. BLOCK:

3 Q. You were asked whether the FDA had ever adopted
4 the heavy liquid separation method. Do you recall
5 that?

6 A. I do.

7 Q. Does the FDA even have any test method for the
8 testing of talc that the FDA has adopted?

9 A. No.

10 Q. Is cosmetic talc even a regulated product in the
11 United States?

12 MS. BROWN: Objection. Far beyond his asking
13 to be able to talk about the FDA's regulated authority
14 as it pertains to cosmetic talc.

15 THE COURT: Sustained.

16 BY MR. BLOCK:

17 Q. You were asked whether the heavy liquid
18 separation was adopted by the government. Is there a
19 government test for testing asbestos in talc?

20 A. No.

21 Q. Okay. So when you applied the
22 generally-accepted methods, including EPA AHERA, is
23 that a test method to determine whether there is
24 asbestos present and how much asbestos is present?

25 A. Could you repeat that?

1 Q. Let me withdraw the question.

2 Is ISO 22262-2, which you followed in this
3 case, is that a generally-accepted test method that
4 includes heavy liquid separation?

5 A. Of course. It is an international standard.

6 Q. Is that the only test method specific to talc
7 that has been published that exists?

8 A. Outside of the USP method with the IR and XRD,
9 that is the only method I'm aware of specific for
10 cosmetic talc using the appropriate methods for the
11 detection limits.

12 Q. Let's go back to the USP method. What is USP?

13 A. USP is the -- is essentially the methods that
14 FDA will require for certain types of tests.

15 Q. Okay. So the USP, which consists of the IR
16 method, and we're looking -- let's talk a little more
17 about what this document is.

18 This is entitled "Stimuli to the Revision
19 Process," and this is the document that was written --
20 was this document written by the USP Expert Talc
21 Panel?

22 A. Yes.

23 Q. Is it from 2014?

24 A. Yes.

25 Q. In terms of what is said here about the USP

1 method, next to "X-ray diffraction," it says:

2 "Limit of detection may be too high for public
3 health and regulatory purposes."

4 And you agree that the detectable limits for
5 X-ray diffraction is too high to rely upon for the
6 detection of asbestos and cosmetic talc particularly
7 as compared to using heavy liquid separation and
8 polarized light microscopy or TEM microscopy?

9 A. Yes, I agree.

10 Q. This USP group said as follows:

11 "Detection of asbestos in talc by the
12 instrumental methods outlined above can be enhanced
13 through the concentration of asbestos particles or
14 separation of asbestos from obscuring or confounding
15 particles."

16 Do you see that?

17 A. Yes, sir, I do.

18 Q. Is that what you were explaining to the Court
19 this morning, that the use of a concentration
20 technique, which heavy liquid separation technique is
21 an example, can enhance the sensitivity of the method
22 to allow better detection of asbestos in talc?

23 A. That is correct. There are different types of
24 concentration methods. The heavy liquid separation
25 happens to be one of them.

1 Q. You were asked earlier about the levels of
2 asbestos in talc and whether the levels of asbestos in
3 talc could or could not translate to a potentially
4 hazardous or significant exposure. Do you remember
5 that?

6 A. Yes.

7 Q. It says: Research by the U.S. EPA and others
8 have shown disturbance of matrixes -- for example,
9 soil, vermiculite insulation, containing asbestos
10 concentration identified by the lower detection limits
11 of PLM, well below 1 percent asbestos by weight, the
12 limit historically used by the U.S. EPA to define
13 asbestos-containing material can generate potentially
14 hazardous exposure."

15 Do you see that?

16 A. I do.

17 Q. Let's talk about some questions you were asked
18 about the amount of asbestos by weight and the
19 significance of that.

20 Now, have you published in the peer-reviewed
21 literature on the amount of exposure from the use of
22 products that contain asbestos?

23 A. I have.

24 Q. And when we look at a product like Johnson's
25 Baby Powder, and we look at this example, and we look

1 at the concentrations you have found in the MDL
2 samples, what range are we looking at?

3 I think we looked before at tens of thousands
4 of asbestos structures per gram up to hundreds of
5 thousands?

6 A. The lower limit is approximately seven, eight to
7 thousand, where we are finding one asbestos fiber or
8 one asbestos bundle up to 260,000, or thereabouts.

9 Q. So in this Johnson's Baby Powder material, is
10 this material a material that would be what's called
11 friable by the EPA?

12 A. Yes.

13 Q. What is the significance of that, that you found
14 63,800 asbestos structures per gram of this Johnson's
15 Baby Powder? What's the significance of the fact that
16 this is in a powdery form when it's used either in the
17 vaginal area, or maybe put on a person's chest or
18 under their arms? What is the significance that it's
19 in a powdery form?

20 MS. BROWN: Your Honor, I'm going to object.
21 He was very clear on cross-examination he has not done
22 an exposure study, and he is not giving a health
23 effects opinion. So beyond a calculation he didn't
24 do, this question is asking for an undisclosed
25 opinion.

1 MR. BLOCK: Your Honor, I think it's
2 responsive to cross. I didn't bring out exposure
3 levels.

4 THE COURT: You tried to this morning and we
5 stopped. So let's move on. We're not going down this
6 avenue.

7 BY MR. BLOCK:

8 Q. As a material scientist, Dr. Longo, is there
9 anything holding the asbestos together? Is there
10 anything encapsulating the product that's keeping it
11 from becoming airborne?

12 A. No, there is nothing there. It is a fine
13 powder. It will be able to get up in the air when it
14 is disturbed, and whatever is in that powder.

15 Q. Dr. Longo, in response to the questions on
16 cross-examination regarding your opinions that there
17 would be a significant exposure from the use of
18 Johnson's Baby Powder, have you relied on the peer-
19 reviewed literature in forming your opinions?

20 A. Yes.

21 Q. Have you relied in part on a study by
22 Drs. Gordon and Millette that studied the amount of
23 asbestos released when cosmetic talcum powder is used?

24 A. Yes.

25 Q. And have you also -- and did that test show

1 significant levels of exposure, thousands of times
2 higher than may be present in the background air?

3 MS. BROWN: Objection, your Honor. He was
4 very clear he did not attempt to quantify exposure
5 here, and counsel is reading other people's articles
6 and asking him to agree.

7 MR. BLOCK: She asked what he meant by
8 "significant" in his report.

9 MS. BROWN: And he made clear he has not done
10 a calculation and has not quantified at all.

11 THE COURT: I have that testimony. That's
12 where it ended.

13 BY MR. BLOCK:

14 Q. Just in terms of structures per gram, let me ask
15 you a question about that:

16 Are you aware from Johnson & Johnson's
17 historical documents that Johnson & Johnson determined
18 the --

19 MS. BROWN: Objection. This is again just
20 trying to get in a quantification of exposure opinion
21 he did not give and quite clearly said he has not done
22 in this case.

23 THE COURT: I would like to stick with his
24 methodology and the basis for his opinion.

25 BY MR. BLOCK:

1 Q. Dr. Longo, one of the questions on
2 cross-examination about your methodology is the
3 definition of asbestos. Do you remember that?

4 A. Yes.

5 Q. Are you aware of Johnson & Johnson's definition
6 of asbestos that is contained in the company's
7 specifications that it has outside of Court?

8 A. Yes.

9 Q. And does Johnson & Johnson's definition of
10 asbestos that it uses in its own specifications
11 outside of court say anything about growth habit?

12 A. No.

13 Q. Does it say anything about tensile strength?

14 A. No.

15 Q. Does it say anything about flexibility?

16 A. No.

17 Q. Does it contain the word "asbestiform"?

18 A. Not that I recall. It just says "fibrous."

19 Q. And under Johnson & Johnson's own
20 outside-of-court definition, as contained in their
21 documents, is fibrous tremolite, fibrous
22 anthophyllite, and fibrous actinolite the same types
23 of asbestos you found in Johnson & Johnson's talc
24 defined by Johnson & Johnson as asbestos?

25 MS. BROWN: Objection. If there is a

1 document, if I could see it.

2 MR. BLOCK: Yes, we'll mark this as Exhibit 5.

3 MS. BROWN: Was this on his reliance list?

4 MR. BLOCK: Dr. Longo has been cross-examined
5 about this document.

6 MS. BROWN: It was not on his reliance list
7 here in the MDL. I object now to him speculating
8 about a company document that was -- your Honor
9 already ruled on this document because they put it on
10 the supplemental list and we objected at that time.
11 Your Honor was very clear, if it was not originally
12 disclosed, and we had the opportunity to question
13 Dr. Longo on it, it was not coming in now.

14 MR. BLOCK: Your Honor, this is redirect
15 examination, and Dr. Longo, there was a
16 cross-examination that suggested that Dr. Longo is not
17 using an appropriate scientifically reliable
18 definition of --

19 THE COURT: I don't know that J&J gives the
20 appropriate scientific definition either, so I don't
21 use them as my standard. That's not the basis for it,
22 and that's not what we're going to use that document
23 for, unless you want to suggest they set the standard.
24 I don't think you do.

25 Let's move on.

1 MR. BLOCK: It's a generally-accepted
2 definition in part because the defendant is using it.

3 THE COURT: I don't know in what context, I
4 don't want to get into what context, why it was put in
5 there. This is not like looking at, as you presented
6 it to me, whether it is some standards set by the
7 government or whatever. That's not what it is.

8 We can take anybody's corporate document and
9 say this is how that corporation defines asbestos.
10 This is how it's been defined by John's Manville, or
11 this is how it's been defined by Colgate Palmolive.
12 I'm not going to get into that. That's not setting my
13 standard for today. I think you have given me the
14 things you would like to set the standard.

15 MR. BLOCK: Thank you, your Honor.

16 BY MR. BLOCK:

17 Q. Dr. Longo, let me ask you about another
18 document, if you could go to tab 43 of your notebook.

19 Now, we're looking at tab 43 in Exhibit 1 for
20 Dr. Longo.

21 Dr. Longo, you were cross-examined by Johnson
22 & Johnson's lawyer, and you were asked whether your
23 lab made a determination of how the asbestos that was
24 identified in Johnson & Johnson's talc was formed.

25 Do you remember that?

1 A. Yes, sir.

2 Q. Are you familiar with an EPA document from 2006
3 that discussed whether you need to determine how an
4 asbestos structure was formed in nature or its growth
5 habit in order for that structure to be identified as
6 asbestos under the generally-accepted test methods?

7 MS. BROWN: Your Honor, I have properly
8 identified the document for the record as the EPA
9 Region 9 document and put it on the record where it
10 is, please.

11 Q. Are you also aware it is an EPA Region 9
12 document?

13 A. Yes.

14 Q. At the end of the document it says the document
15 reflects the testing procedures and policies of the
16 EPA as a whole?

17 A. Yes.

18 Q. So looking at this document at page 11 we have a
19 slide. It says, quote:

20 "It is the position of EPA, the U.S. Centers
21 for Disease Control and Prevention, Agency For Toxic
22 Substances and Disease, Registry and National
23 Institute for Occupational Safety and Health, and the
24 American Thoracic Society, among others, that
25 microscopic structures of amphibole and serpentine

1 materials that are asbestiform and meet the size
2 definition of PCM fibers should be counted as asbestos
3 regardless of the manner by which they were formed."

4 Is that what it says?

5 A. Yes, sir, that's what it states.

6 Q. And PCM fibers, does that refer to phase
7 contrast microscopy?

8 A. It does.

9 Q. How is that similar or different to PLM, which
10 you've discussed in your testimony?

11 A. Well, PCM is an optical for fibers. This is for
12 air samples. Polarized light microscopy is for bulk
13 samples. If you want to compare air samples, this
14 3-to-1 aspect ratio is lower than the standard we use
15 which is the AHERA and the other counting methods that
16 it has to be at least a 5-to-1 aspect ratio.

17 Q. Does this statement by EPA in tab 43 of
18 Plaintiffs' Exhibit 1, this document from EPA Region
19 9, dated April 20th, 2006, does this reflect the fact
20 that if you follow the test method, whether it be for
21 TEM or PLM microscopy, and it satisfies the method,
22 that it is properly identified and counted as asbestos
23 regardless of the manner by which the asbestos
24 structure was formed?

25 A. Correct.

1 Q. When you published in the peer-reviewed
2 literature, looking, again, at Tab 12, your article
3 where you analyzed vermiculite and found tremolite
4 asbestos and other types of asbestos, and you applied
5 the EPA AHERA method, did you apply the EPA AHERA
6 method any differently than you did in this case?

7 A. No, sir.

8 Q. So your scientific methodology that was
9 subjected to the peer review process here, where you
10 applied the EPA AHERA method, did it follow the same
11 three-step TEM that you've used in identifying
12 asbestos in Johnson & Johnson's talc?

13 A. Yes.

14 Q. And did you publish in the peer-reviewed
15 literature that even though a material which in this
16 case was vermiculite has concentrations often less
17 than 0.1 percent asbestos, that it can still cause
18 significant exposures that can be in excess of current
19 regulatory exposure limits?

20 A. Yes.

21 Q. You were asked about the OSHA PEL. Are you
22 familiar with the OSHA regulations?

23 A. Yes.

24 Q. Is the OSHA PEL recognized by OSHA as to not be
25 a safe level of exposure of asbestos?

1 A. That's what the preamble says.

2 Q. And if we look back at Plaintiffs' Exhibit 4,
3 which is the USP expert panel, is that what they say
4 when they are talking about talc? In this article it
5 says:

6 "There are currently no established safe
7 levels of asbestos exposure. This underscores the
8 efforts of the talc EP, expert panel, to identify the
9 strategies and methods for reducing the potential for
10 asbestos contamination of talc to the lowest feasible
11 levels."

12 Is that what the USP expert panel concluded in
13 2014?

14 A. That's what it states.

15 Q. Does that same USP expert panel also recommend
16 including additional sample preparation/concentration
17 methods to improve the feasible limits of detection as
18 indicated C section 5.4?

19 A. That's what it states, yes.

20 Q. Do you agree based upon your testing of Johnson
21 & Johnson's talc that a concentration method such as
22 the heavy liquid separation should be used to have the
23 most sensitive method in detecting asbestos in talc
24 including Johnson & Johnson's talc?

25 A. That is correct.

1 Q. And isn't it true that Johnson & Johnson does
2 not use any concentration method or heavy liquid
3 separation method despite the recommendations of the
4 USP expert panel in 2014? Is that true?

5 A. Not that I'm aware of.

6 Q. Have you reviewed Johnson & Johnson's test
7 methods for testing asbestos in talc?

8 A. I have.

9 Q. Have you ever seen any evidence that Johnson &
10 Johnson knowing what the --

11 MS. BROWN: Objection.

12 THE COURT: I was waiting for you to get up.

13 Sustained. I thought you were a little slow
14 on your feet this time.

15 MS. BROWN: I was a little slow. I apologize.

16 Thank you.

17 BY MR. BLOCK:

18 Q. Dr. Longo, you were asked about cleavage
19 fragments. Do you recall that?

20 A. Yes, sir.

21 Q. If the three-step TEM method is met -- is it a
22 cleavage fragment?

23 A. I'm sorry?

24 MS. BROWN: Your Honor, I don't mean to
25 interrupt, but I think we are coming close to an HOUR

1 on the redirect, and I want to object about the length
2 and the breadth and the scope of the redirect.

3 THE COURT: I assume you are finishing now.

4 MR. BLOCK: May I have another 10 minutes?

5 THE COURT: I gave you extra time this morning
6 too. You have taken more than the cross has been.
7 Let's finish up for the day.

8 BY MR. BLOCK:

9 Q. If the TEM three-step method is met as set forth
10 in the generally-accepted methods you described to the
11 Court, is the particle -- whether it be tremolite,
12 anthophyllite, or actinolite -- a cleavage fragment or
13 asbestos?

14 A. It is asbestos.

15 Q. And in terms of a cleavage fragment, the
16 Campbell article that you were asked about from 1977,
17 what does it say is the normal aspect ratio for a
18 cleavage fragment?

19 A. Less than 3-to-1.

20 Q. And did you count any tremolite, actinolite, or
21 anthophyllite that you found in Johnson & Johnson's
22 talc that met that definition of a cleavage fragment
23 that you just stated from the Campbell article in
24 1977?

25 A. No. For what we called regulated asbestos, it

1 all had the standard methodology that is used in TEM
2 labs and by the EPA.

3 Q. Dr. Longo, you were asked whether your lab has
4 met the standard from the NVLAP when it comes to the
5 distinction between fibers and bundles. Do you
6 remember being asked that on the cross?

7 A. Yes.

8 Q. And has your lab been subject to annual audit
9 testing by the NVLAP on the issue of whether your
10 analysts are properly distinguishing between fibers
11 and bundles at a rate of at least 90 percent?

12 MS. BROWN: I object. This is the subject of
13 the report that was added to the supplemental list
14 after his deposition. This was issued in June. This
15 certification was only produced in June, and your
16 Honor ruled it was not an appropriate area of inquiry
17 in this case. I object to the use of the document and
18 this line of questioning.

19 MR. BLOCK: Your Honor, the question is about
20 historical testing by the NVLAPs during the years 2014
21 to 2017. It's not new and it is directly responsive
22 to the cross-examination that suggested that
23 Dr. Longo's lab had not met --

24 THE COURT: I'm going to permit your question,
25 not the document. Don't introduce the document. You

1 can ask the question.

2 BY MR. BLOCK:

3 Q. Dr. Longo, was your lab subjected to NVLAP audit
4 testing on the issues of fibers and bundles?

5 THE COURT: When?

6 Q. And when was that, Dr. Longo?

7 A. Every year.

8 Q. Let's talk about the last five years. Has your
9 lab been subject to that testing during any time in
10 the last five years?

11 A. I reviewed 2017, 2016, 2015, 2014.

12 Q. In that time period between 2014 and 2017, are
13 these the analysts that tested Johnson & Johnson's
14 talc for the presence of asbestos in the MDL?

15 A. Yes. Some of the same analysts in 2017, they
16 are all of the same analysts.

17 Q. For the 2017 testing that was done by the NVLAP,
18 what was the level of consistency in terms of
19 validation of the analysts that tested Johnson &
20 Johnson's talc for asbestos to accurately determine
21 whether the asbestos structure is a fiber or a bundle?

22 A. It was above 95 percent agreement.

23 Q. How about those previous three years, 2016, 2015
24 and 2014?

25 A. They were all above 95 percent agreement.

1 MR. BLOCK: Dr. Longo, thank you very much. I
2 have no further questions.

3 Thank you, your Honor.

4 THE COURT: Okay. We're done for the day.

5 You are excused, Dr. Longo. You may step
6 down.

7 (Witness excused.)

8 (Court adjourned at 4:20 p.m.)

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I N D E X

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William Edward Longo

Mr. Block	440	--	632	--
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E X H I B I T S

C E R T I F I C A T E

PURSUANT TO TITLE 28, U.S.C., SECTION 753, THE
FOLLOWING TRANSCRIPT IS CERTIFIED TO BE AN ACCURATE
TRANSCRIPTION OF MY STENOGRAPHIC NOTES IN THE
ABOVE-ENTITLED MATTER.

S/Vincent Russoniello
Vincent Russoniello, CCR
Certificate No. 675

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